



SERVICE
MANUAL **PM330**

marantz®

model **PM330**

Stereo Pre Main Amplifier

MARANTZ DESIGN AND SERVICE

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3. Description of parts
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Moor Lane
Harmondsworth UB7 OLW
Great Britain
Telex: 935196

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MARANTZ AUSTRALIA PTY., LTD.
32 Cross Street
Brookvale, N.S.W. 2100
Australia
Telex: 24121

All of the above locations are fully equipped to take care of your total service needs. Because various countries have differing configuration requirements, it is necessary that you contact the service facility in your particular country. In the event that there is no service location listed for your country, please, contact the nearest facility for the necessary assistance.

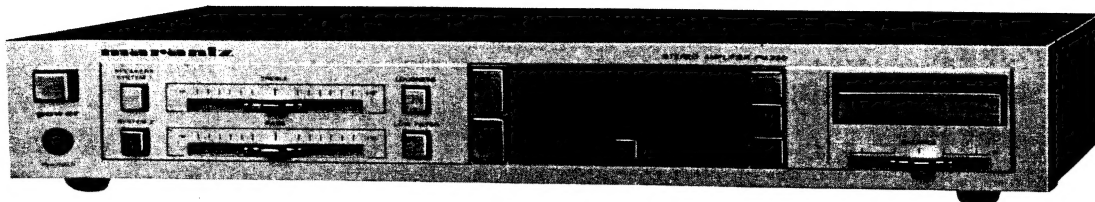
In case of difficulties, do not hesitate to contact the Technical Department at abovementioned address.

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MODEL PM330 STEREO AMPLIFIER



INTRODUCTION

This service manual was prepared for use by Authorized Warranty Stations and contains service information for the Marantz Model PM330 Stereo Console Amplifier.

Servicing information and voltage data included in this manual are intended for use by knowledgeable and experienced personnel only. All instructions should be read carefully. No attempt should be made to proceed without a good understanding of circuitry operation.

The parts list furnishes complete ordering information. Most replacement parts should be ordered from the Marantz Company. However, a simple description is included for parts which can be obtained locally.

1. FUNCTION SWITCH

The function switches control a high voltage (25 V) type switching IC (LC7185H) to select one of the four inputs and the tape monitor channel which is selected with the TAPE OUT/MONITOR switch. The TAPE OUT/MONITOR switch controls a high voltage-type switching IC (LC4066 BH).

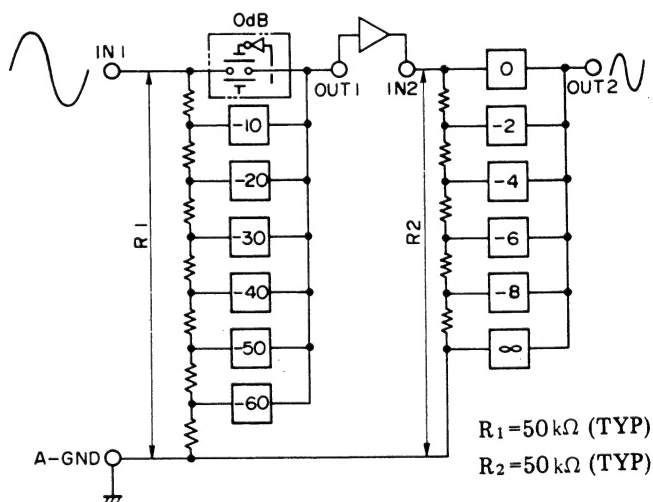
The source which is selected when the power switch was turned off is automatically reselected when the power is turned on.

The signals from the AUX, TUNER and TAPE (1) input terminals are applied to electronic switch QS01. The signal from the PHONO input terminals are amplified (35 dB) and equalized by equalizer amplifier Q401, then applied to electronic switch QS01.

The signals from the TAPE (2) IN terminals are applied to electronic switch QS02, then applied to QS01. The circuits to the TAPE (1) OUT terminals are switched with QS03 so that the signals are not fed back to TAPE (1) when TAPE (1) is selected with the function switch.

2. ELECTRONIC VOLUME CONTROL

Resistors connected in series which are switched by means of analog switches are used for the attenuator. The attenuator consists of two sections: one varies the degree of attenuation in 10 dB steps; the other varies it in 2 dB steps. With this attenuator, the degree of overall attenuation can be varied from 0 dB to -60 dB in 2 dB steps. The analog switches are controlled by an internal oscillator, and the degree of attenuation is automatically set to -40 dB when the power is turned on.



The volume level indicators are controlled by the volume control IC: this IC outputs a DC current at one of 13 levels (a multiple of 50 μ A) depending on the degree of attenuation.

A remote volume control terminal is provided on the rear panel so that the volume can be remotely controlled.

3. PREAMPLIFIER

The first stage of the preamplifier uses op-amplifier NJM 4560DD (selected for internal noise) (QE01) and has a gain of about 20 dB. Loudness control elements are inserted in the NF circuit of this stage so that frequency response is increased by 6 dB at 100 Hz.

The second stage is an NF type tone control circuit using op-amplifier NJM4558D (QE02). The frequency response can be varied with slide type potentiometers as shown below.

TREBLE ± 10 dB at 10 kHz
BASS ± 10 dB at 100 Hz

4. MODE SWITCH CONTROLLER

The loudness control uses a slide switch with a stroke of 1.5 mm to control the loudness elements in stage 1 of the preamplifier.

The low filter circuit follows the 2nd stage of the pre-amplifier and has an attenuation of 3.5 dB at 50 Hz. The muting circuit following the low filter has an attenuation of -20 dB and is controlled by a slide switch with a stroke of 1.5 mm.

5. POWER AMPLIFIER

Hybrid IC STK-3042-IIA is used for the voltage amplifier, and the power amplifier stage uses discrete transistors. STK-3042-IIA is an improved version of STK-3042 and it shows good performance with pop noises. Thus, no muting relay is required for the PM330. The input stage of the power amplifier uses 2SD1302 (QK03 and QK04), which features low Vce saturation so that the output signal is muted when the function switch is operated or the power is turned on and off. (The gain is about 30 dB.) LED driver AN6886 (QX01) is used to indicate the power level in 5 steps.

6. SPEAKER

Two sets of speaker systems can be connected and selected with speaker switches 1 and 2. The headphone jack is always connected to the power amplifier.

7. P.W. BOARDS

As can be seen from the circuit diagram the chassis of Model PM330 consists of the following units. Each unit mounted on a printed circuit board is described within the square enclosed by a bold dotted line on the circuit diagram.

1. Phono Amp./
Input Terminal mounted on P.W. Board P400
2. Main mounted on P.W. Board P700
3. Tone Amp. mounted on P.W. Board PE00
4. Tone Volume mounted on P.W. Board PE01
5. Low Filter mounted on P.W. Board PE02
6. Tone Amp.
Volume Control mounted on P.W. Board PE03
7. Balance Volume mounted on P.W. Board PG02
8. Elect Volume Switch mounted on P.W. Board PG03
9. Power Switch mounted on P.W. Board PO00
10. Speaker Switch mounted on P.W. Board PT00
11. Speaker Terminal mounted on P.W. Board PV00
12. Phone Jack mounted on P.W. Board PW00
13. Function
Power Disply mounted on P.W. Board PX00
14. Elect Volume LED mounted on P.W. Board PY00

8. TEST EQUIPMENT REQUIRED FOR SERVICING

This table lists the test equipment required for servicing the Model PM330 Stereo Pre Main Amplifier.

| Item | Use |
|---|--|
| Distortion Analyzer | Distortion measurements |
| Audio Oscillator | Sinewave and squarewave signal source |
| AC VTVM | Voltage measurements (AC) |
| Oscilloscope | Waveform analysis and trouble shooting and ASO alignment |
| Circuit Tester | Trouble shooting |
| DC VTVM | Voltage measurements (DC) |
| AC Wattmeter | Monitors primary power to amplifier |
| Line Voltmeter | Monitors potential of primary power to amplifier |
| Variable Autotransformer (0 ~ 140V AC, 10A) | Adjust level of primary power to amplifier |
| Shorting Plug | Shorts amplifier input to eliminate noise pickup |

9. ADJUSTMENT PROCEDURES

1. Volume indicator level adjustment

- 1) Apply an 1 kHz, 100 mV signal to the TUNER IN terminal. Leave the speaker terminal unloaded.
- 2) Depress the UP side of the VOLUME UP/DOWN control until the output level stops increasing.
- 3) Depress the DOWN side until the volume level decreases by 2 steps (about -4 dB).
- 4) Adjust RG24 (3 k Ω) to where 5 (green) LEDs of the volume indicator light.
- 5) Turn the power switch off and turn it on again. Confirm that 2 LEDs of the volume indicator light. Maximize the volume level and confirm that 5 LEDs of the volume indicator light.

2. Idling adjustment

- 1) Open all input and output terminals on the unit.
- 2) Connect a digital voltmeter between the + and - terminals of TP-1 for the L channel or between the + and - terminals of TP-2 for the R channel.
- 3) Adjust R729 (channel L) or R730 (channel R) so that the voltmeter reads 7 mV about 1 minute after the power has been turned on. (Note that the idling current is about 20 mA after the unit has warmed up.)

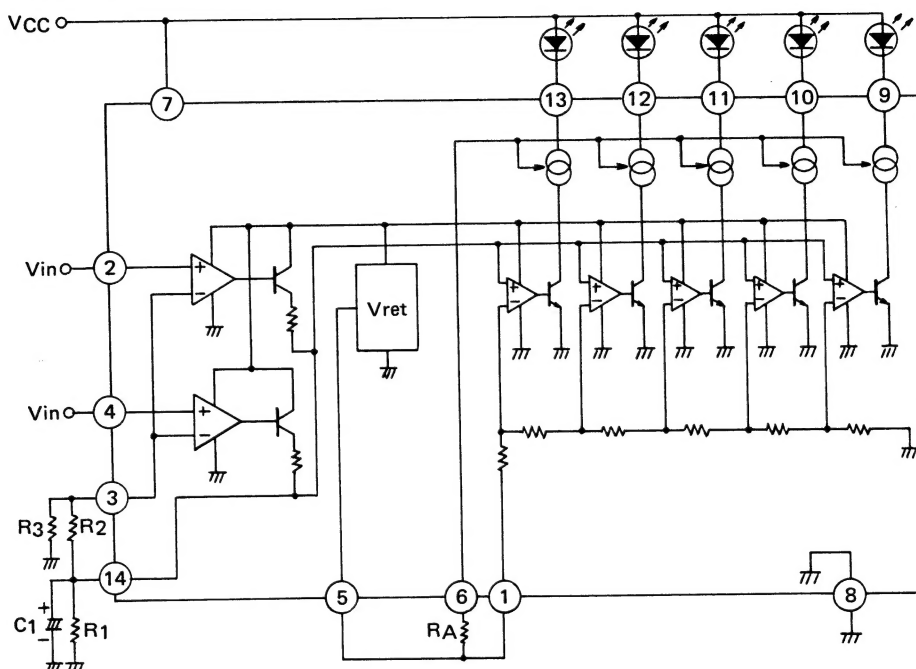
3. Power level indicator adjustment

- 1) Apply a 1 kHz, 170 mV signal to the TUNER IN (R) terminal. Connect an 8-ohm load to the speaker terminals.
- 2) Increase the volume until 5 LEDs of the volume indicator light. Adjust RX05 so that the power level indicator reads 30 W (15.5 V).

10. CIRCUIT DESCRIPTION

10.1 AN6886 LED driver (QX01)

● Block diagram



● Absolute rating (Ta=25°C)

| Item | Symbol | Rating | Unit |
|---|------------------------------|------------|------|
| Supply voltage | VCC | 18 | V |
| LED drive terminal voltage | V _{9,10,11,12,13-8} | 18 | V |
| LED drive terminal current | I _{9,10,11,12,13} | 30 | mA |
| Circuit voltage | V ₁₄₋₈ | 12 | V |
| Reference voltage terminal output current | I ₅ | 10 | mA |
| RA Terminal Input current | I ₆ | 10 | mA |
| Allowable power dissipation | P _D | 480 | mW |
| Operating temperature | T _{opr} | -30 ~ +75 | °C |
| Storage temperature | T _{stg} | -55 ~ +150 | °C |

● Electrical characteristics (VCC=6V, Ta=25°C)

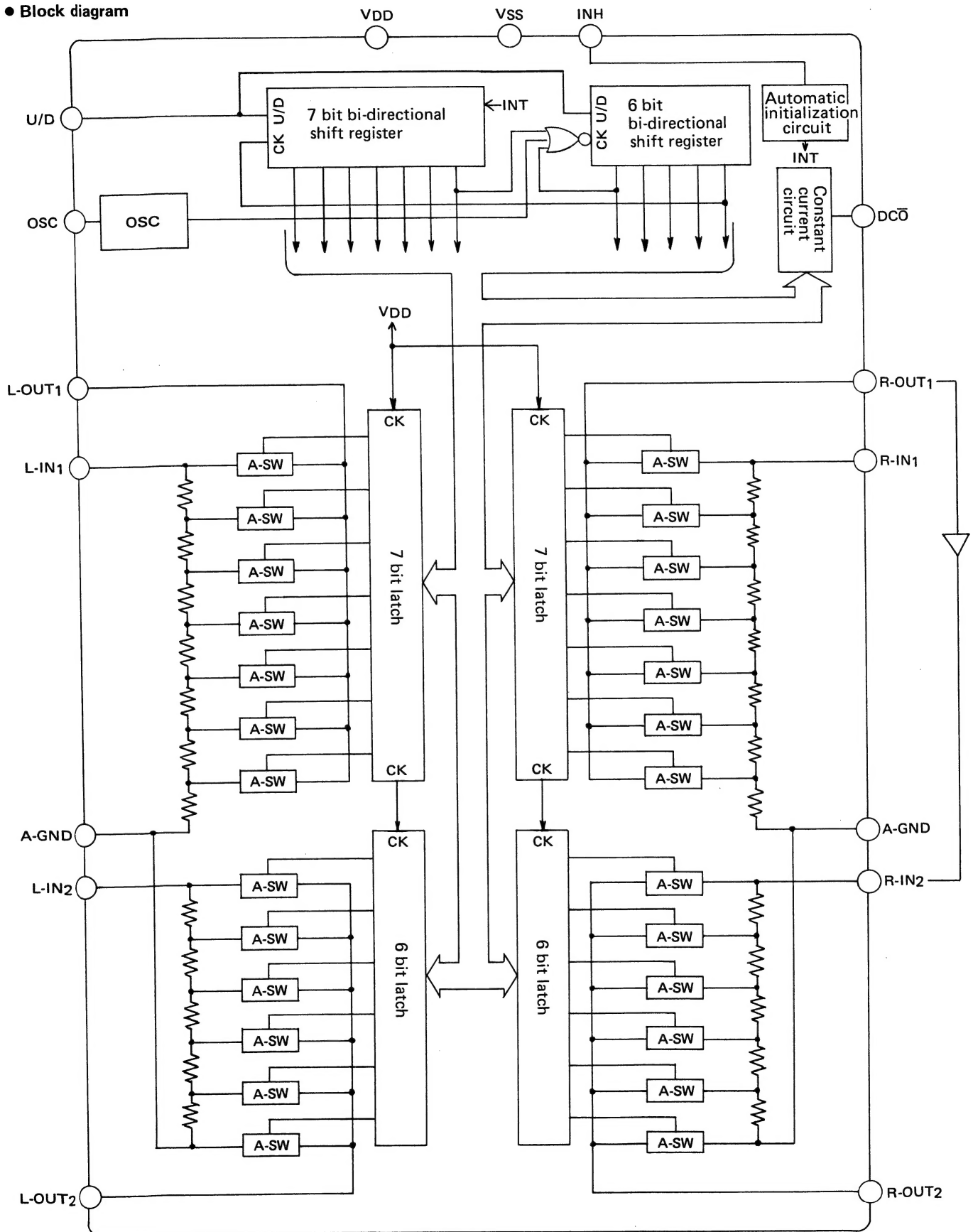
| Item | Symbol | Conditions | Min. | Typ. | Max. | Unit |
|---------------------|-------------------|--|------|------|------|------|
| Current consumption | I _{CC} | R _A =Open, V _{in} =0V | | 5 | 10 | mA |
| Input bias current | I _{2,4} | -1 | -1 | | 0 | μA |
| Reference voltage | V _{ref} | VCC=4 ~ 16V | 2.6 | 2.8 | 3.0 | V |
| Output current | I _{9~13} | R _A =Open, | 4 | | 8 | mA |
| Gain of amplifier | G _{V1} | V ₂ =50mV, R ₁ =10kΩ R ₂ =90kΩ, R ₃ =10kΩ | | 20 | | dB |
| Gain of amplifier | G _{V2} | V ₄ =50mV, R ₁ =10kΩ R ₂ =90kΩ, R ₃ =10kΩ | | 20 | | dB |

● Typical input levels for driving LEDs

| LED | 1 | 2 | 3 | 4 | 5 |
|------------|-----|----|---|---|---|
| Level (dB) | -10 | -5 | 0 | 3 | 6 |

10.2 Electronic Volume Control IC TC9153P (QG02)

● Block diagram



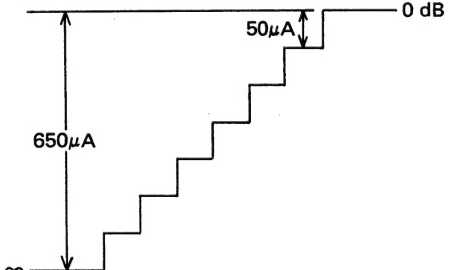
● Absolute ratings

| Item | Symbol | Rating | Unit |
|-----------------------------|------------------|---|------------------|
| Supply voltage | V _{DD} | 14 | V |
| Input voltage | V _{IN} | -0.3 ~ V _{DD} +0.3 | V |
| Input voltage | V _{IN} | V _{SS} -0.3 ~ V _{DD} +0.3 | V |
| Analog input voltage | V _{IN} | 4.0 | V _{rms} |
| Allowable power dissipation | P _D | 150 | mW |
| Operating temperature | T _{opr} | -30 ~ 75 | °C |
| Storage temperature | T _{stg} | -55 ~ 125 | °C |

● Pin configuration

| | | | |
|-----------------|---|----|-----------------|
| V _{SS} | 1 | 16 | V _{DD} |
| L-OUT1 | 2 | 15 | R-OUT1 |
| L-IN1 | 3 | 14 | R-IN1 |
| A-GND | 4 | 13 | A-GND |
| L-IN2 | 5 | 12 | R-IN2 |
| L-OUT2 | 6 | 11 | R-OUT2 |
| INH | 7 | 10 | U/D |
| DCO | 8 | 9 | OSC |

● Pin functions

| Pin No. | Symbol | Function |
|---------|------------------|--|
| 2 15 | L-OUT1 R-OUT1 | 10 dB step attenuator output. The input signal is attenuated from 0 to 60 dB in 10 dB steps. |
| 3 14 | L-IN1 R-IN1 | 10 dB step attenuator input. |
| 4 13 | A-GND | Ground terminal |
| 5 12 | L-IN2 R-IN2 | 2 dB step attenuator input. |
| 6 11 | L-OUT2 R-OUT2 | 2 dB step attenuator output. The input signal is attenuated from 0 to 8 dB in 2 dB steps. |
| 7 | INH | Inhibit terminal. When a low level signal is applied to this terminal, all input and output is inhibited; otherwise, the IC operates normally. |
| 8 | DCO | Attenuation indicator drive output. This terminal outputs a DC current at one of 13 levels (a multiple of 50 μ A) depending on the degree of attenuation.  |
| 9 | OSC | CR terminal for OSC. The time constant of the capacitor and resistor connected to this terminal determines the up/down speed of volume control. |
| 10 | U/D | Up/down control signal input terminal. When a high level signal is applied to this terminal, the volume increases at the rate determined by the oscillator; otherwise, it is reduced at that rate. |

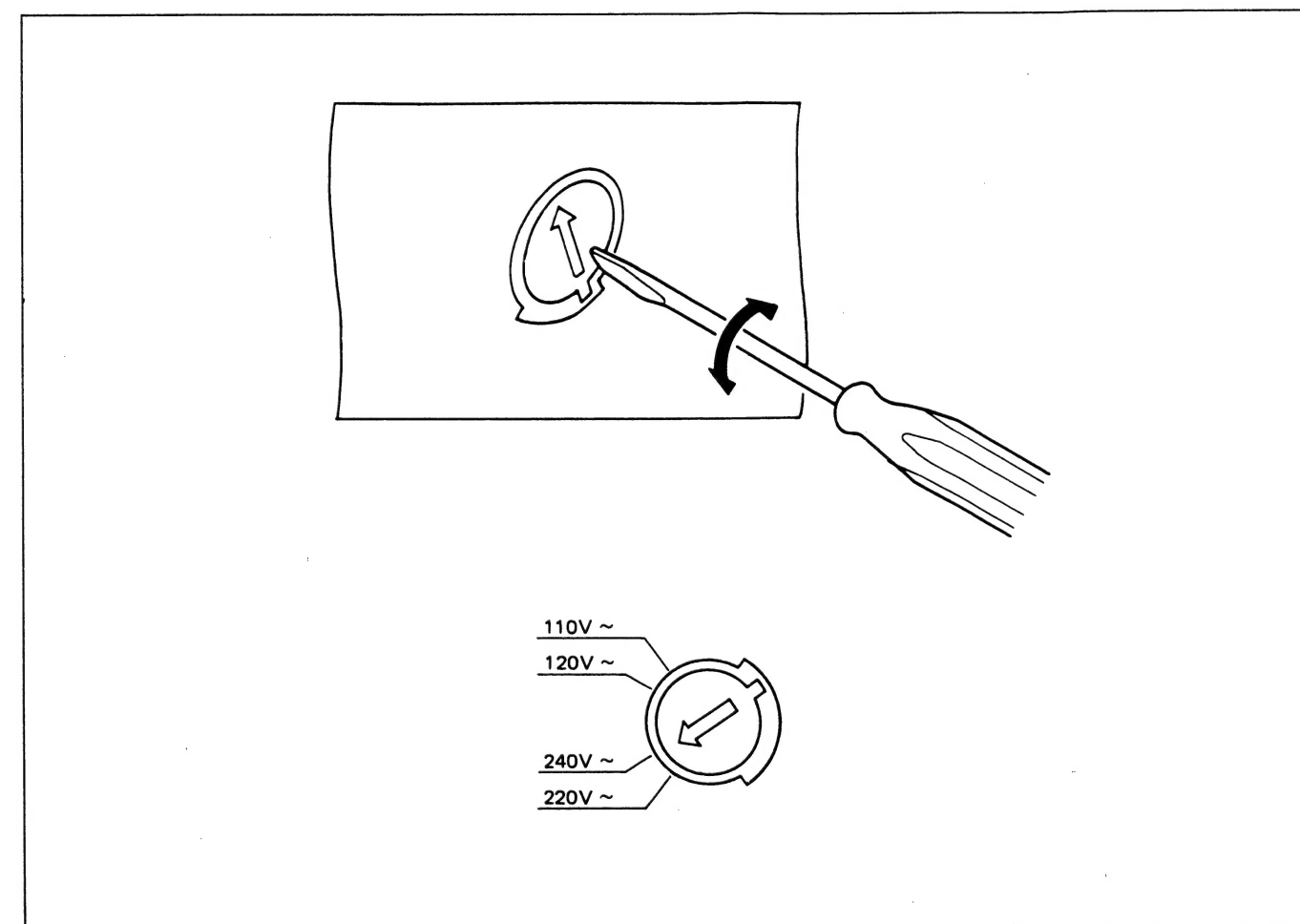
11. VOLTAGE CONVERSION

● EUROPEAN MODEL ONLY

To convert the unit to a different power source voltage, change the position as illustrated in the drawing below.

CAUTION
DISCONNECT POWER SUPPLY CORD FROM AC OUTLET BEFORE CONVERTING VOLTAGE.

Voltage Conversion Chart



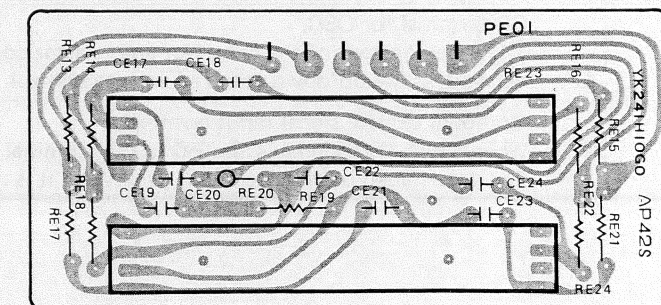
Note on safety: Symbol \triangle Fire or electrical shock hazard. Only original parts should be used to replace any part marked with symbol \triangle . Any other component substitution (other than original type), may increase risk of fire or electrical shock hazard.

The diagram illustrates the internal components and signal flow of a stereo receiver. It is organized into several functional sections:

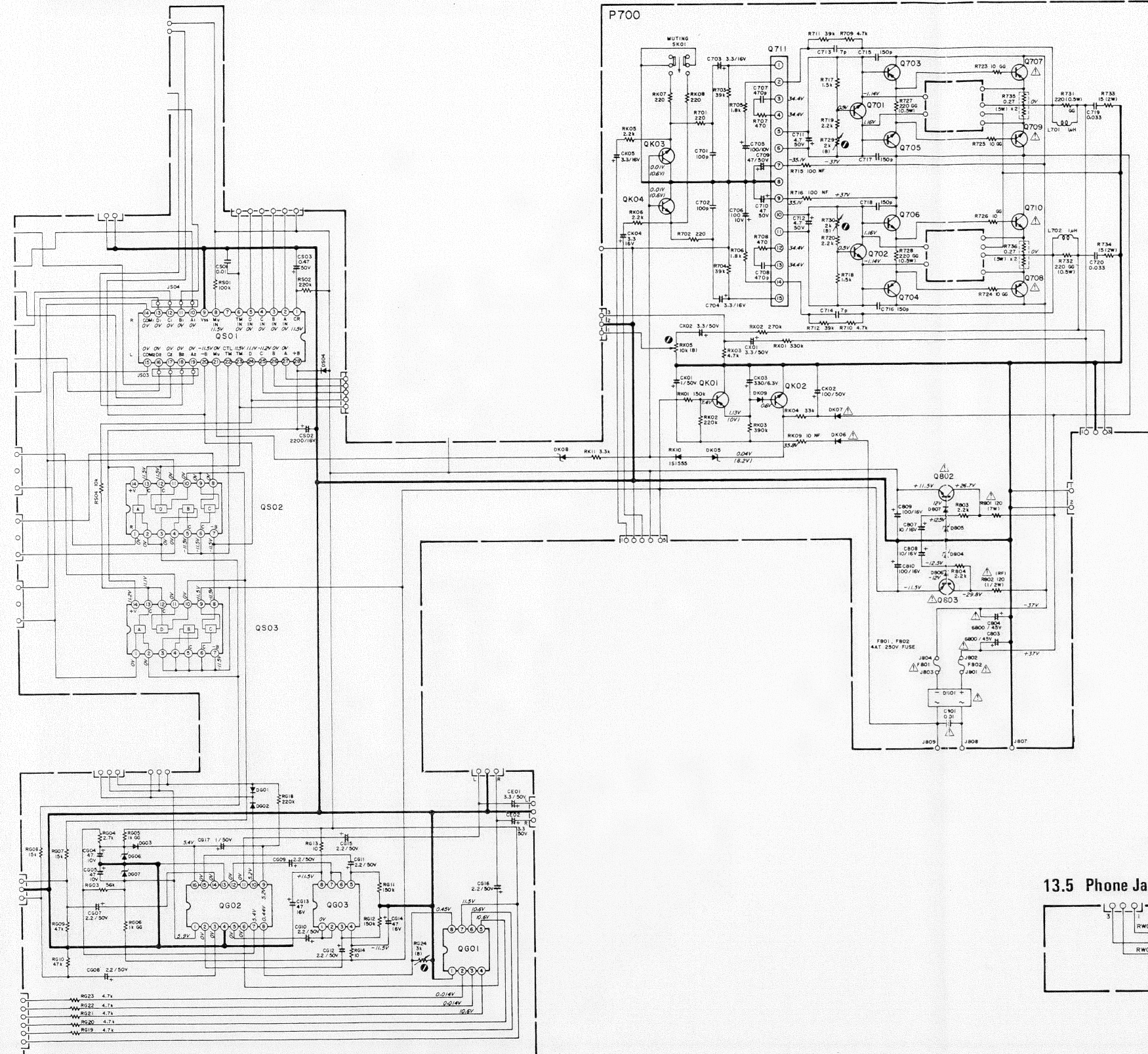
- Input Section:** Features five input sources: PHONO, TUNER, CD / AUX, TAPE 1 / VIDEO, and TAPE 1 OUT. These are connected to a central **ELECTRONIC FUNCTION SWITCH**. A **FUNCTION INDICATOR** (a row of five squares) is positioned above this switch.
- Amplification and Monitoring Section:** The PHONO input passes through a **PHONO AMP** before reaching the switch. The TAPE 1 OUT signal is also routed through a **TAPE 1 OUT ANALOG SWITCH**. The TAPE 2 OUT and TAPE 2 IN signals are connected to **TAPE MONITOR ANALOG SWITCH** units, which are shown in a dashed box. A **BALANCE VOLUME** control is located between the input and output stages.
- Volume and Tone Control Section:** The signal path continues through an **ELECTRIC VOLUME** control, which is linked to a **VOLUME LEVEL INDICATOR** (a row of five squares). This is followed by a **FLAT AMP** and a **LOUDNESS** control. A **LOW FILTER** and a **TONE AMP** are also part of this section. The TONE AMP has **BASS** and **TREBLE** sliders.
- Output Section:** The signal is then sent to a **POWER AMP** and a **MUTING -20dB** control. A **POWER INDICATOR** (a row of five squares) is located above the power amp. The output is controlled by a **SPEAKER SWITCH** and can be directed to **HEAD PHONE** or a multi-speaker system. The multi-speaker system is divided into **SYSTEM 1** (with L and R channels) and **SYSTEM 2** (also with L and R channels). Connections for **OTHER CHANNEL** are also shown.

13.1 Function Power Disply Assembly (PX00) Schematic Diagram and Component Locations

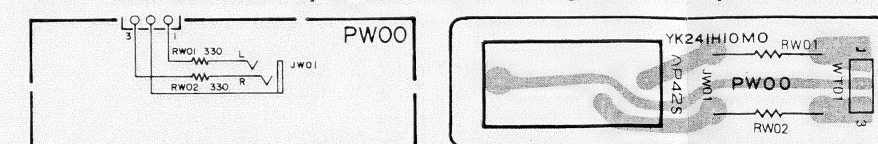
The diagram shows the PY00 component, which is a 5-pin device. The top view shows five pins labeled 1 through 5. The bottom view shows five pins labeled 6 through 10. The internal structure shows five diodes connected in a common-cathode configuration. The diodes are labeled DG05, AP42S, and YK241H. The component is also labeled PY00 and 10FO.



13.4 Main Assembly (P700) Schematic Diagram and Component Locations



13.5 Phone Jack Assembly (PW00) Schematic Diagram and Component Locations



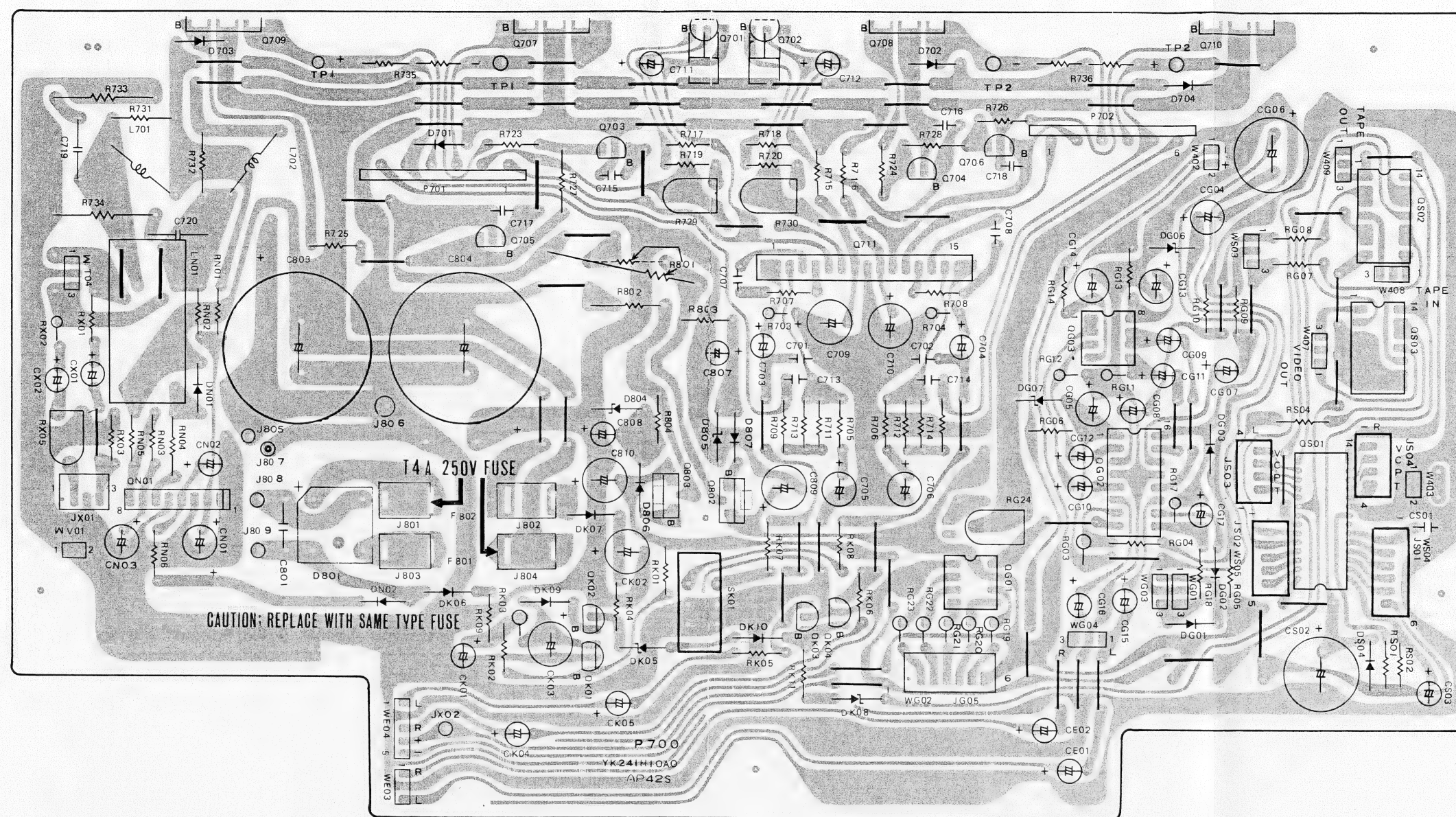
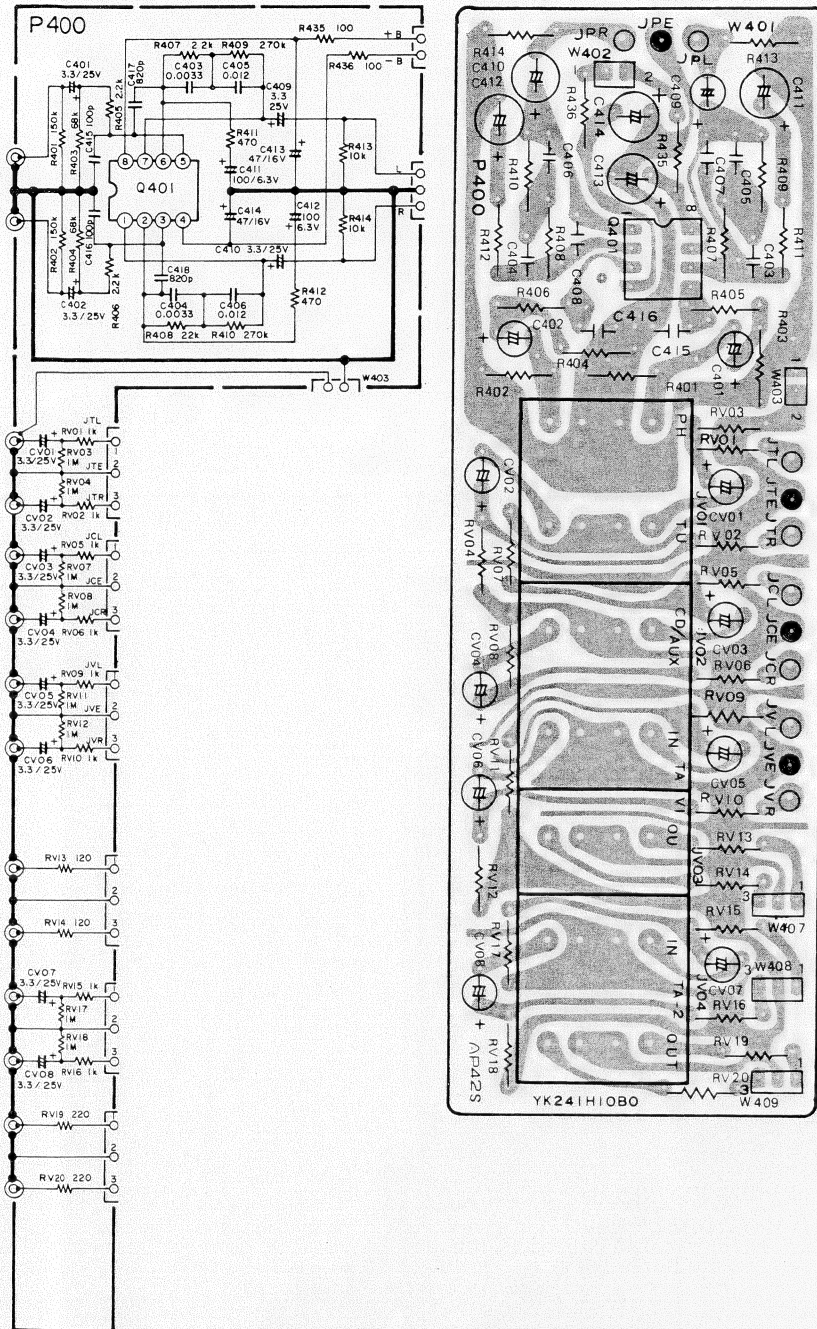
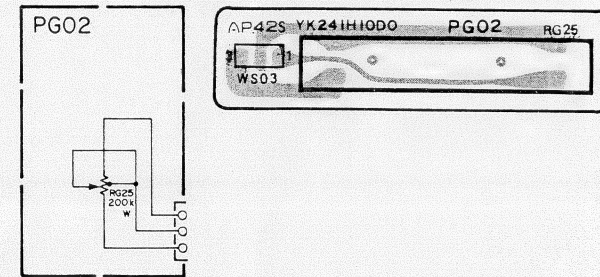


Figure 1 consists of a schematic diagram and a photograph of the PW00 circuit. The schematic diagram shows a power supply section with a 3V source connected to a 330 ohm resistor (RW01) and a 330 ohm resistor (RW02). The output is labeled JW01. The photograph shows the physical circuit board with components labeled YK241H10M0, RW01, JW01, PW00, RW02, and W T01.

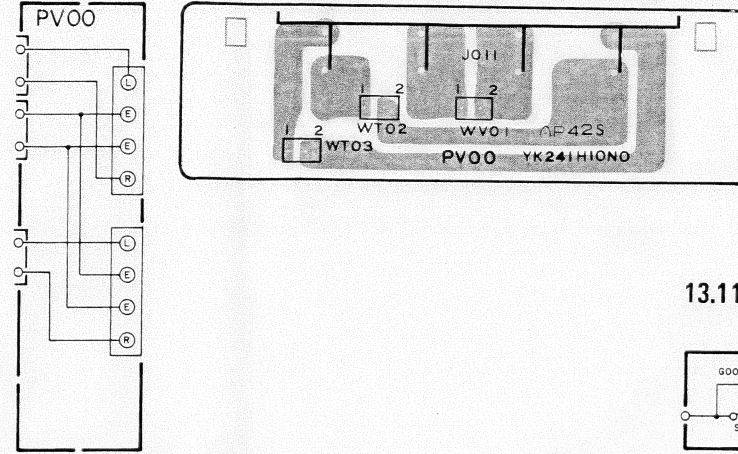
13.7 Phono Amp./Input Terminal Assembly (P400) Schematic Diagram and Component Locations



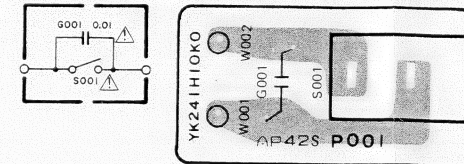
13.8 Balance Volume Assembly (PG02) Schematic Diagram and Component Locations



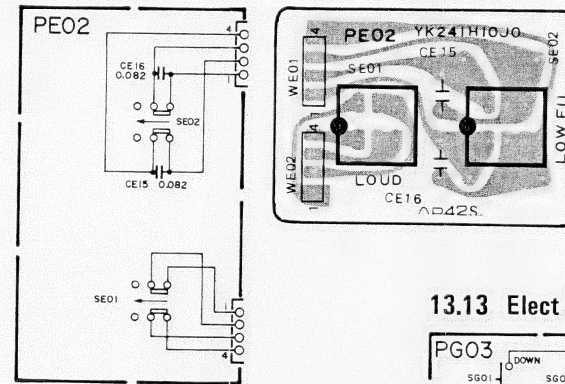
13.9 Speaker Terminal Assembly (PV00) Schematic Diagram and Component Locations



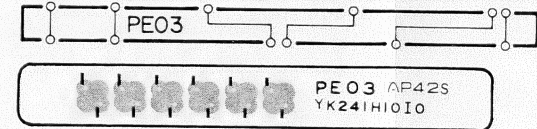
13.11 Power Switch Assembly (P001) Schematic Diagram and Component Locations



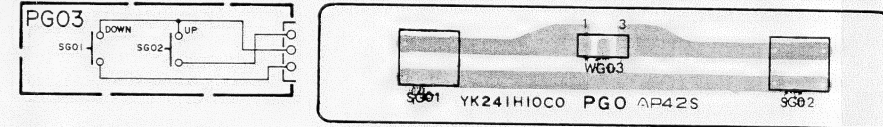
13.10 Low Filter Load Assembly (PE02) Schematic Diagram and Component Locations



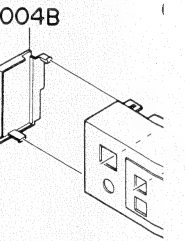
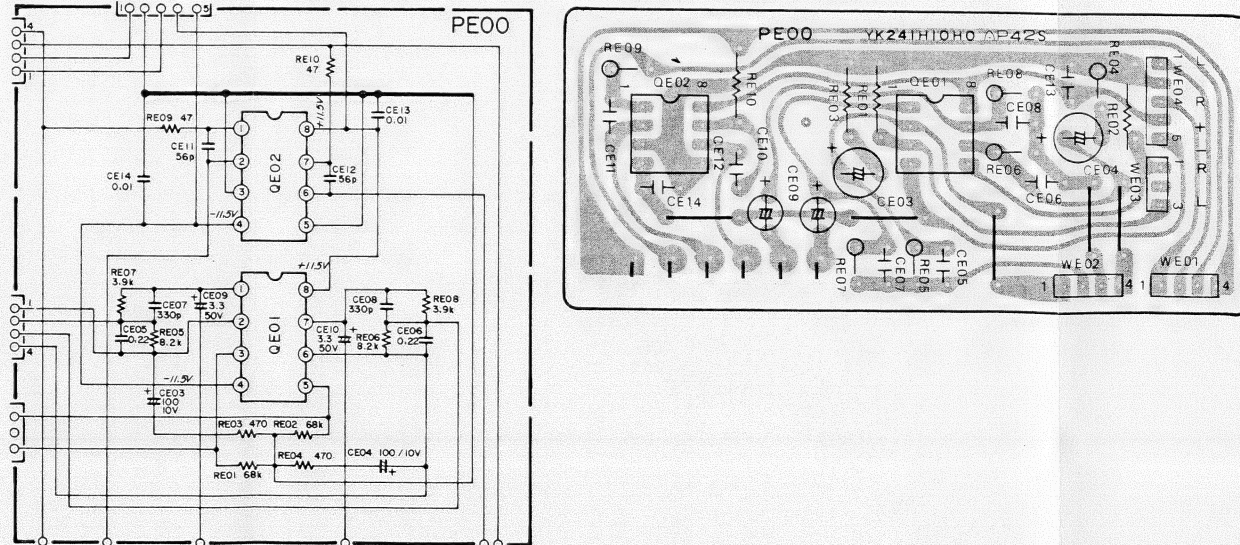
13.12 Tone Amp./Volume Control Assembly (PE03) Schematic Diagram and Component Locations



13.13 Elect Volume Switch Assembly (PG03) Schematic Diagram and Component Locations

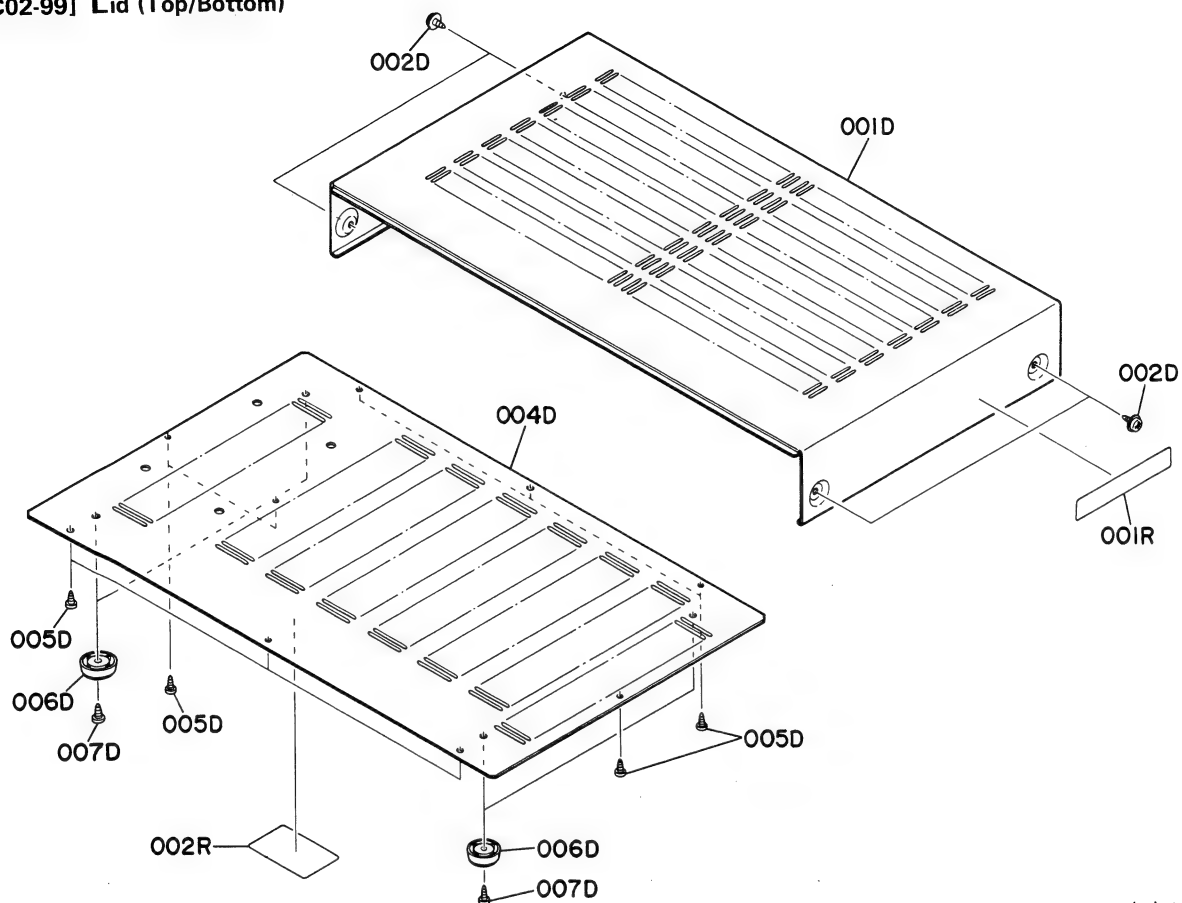


13.14 Tone Amp. Assembly (PE00) Schematic Diagram and Component Locations



| REF. DESIG. | QTY | N | A | PART NO |
|-------------|-----|---|---|-----------|
| A | 1 | 1 | | 241H0634C |
| 002B | 1 | 1 | | 241H06301 |
| 003B | 1 | 1 | | 415H06721 |
| 004B | 1 | 1 | | 415H06722 |
| 008B | 1 | 1 | | 415H25921 |
| 009B | 2 | 2 | | 241H2590E |
| 010B | 1 | 1 | | 241H25903 |
| 011B | 1 | 1 | | 241H25902 |
| 012B | 1 | 1 | | 241H25901 |
| 013B | 1 | 1 | | 241H25904 |
| 015B | 1 | 1 | | 241H15801 |
| 020B | 2 | 2 | | 416H15422 |
| 021B | 3 | 3 | | 420H15421 |
| 022B | 5 | 5 | | 416H11501 |
| 025B | 1 | 1 | | 241H15401 |
| 005B | 2 | 2 | | 51280308B |
| 006B | 2 | 2 | | 51280308B |
| 019B | 3 | 3 | | 141T15405 |
| 026B | 2 | 2 | | 51282608B |

● [C02-99] Lid (Top/Bottom)

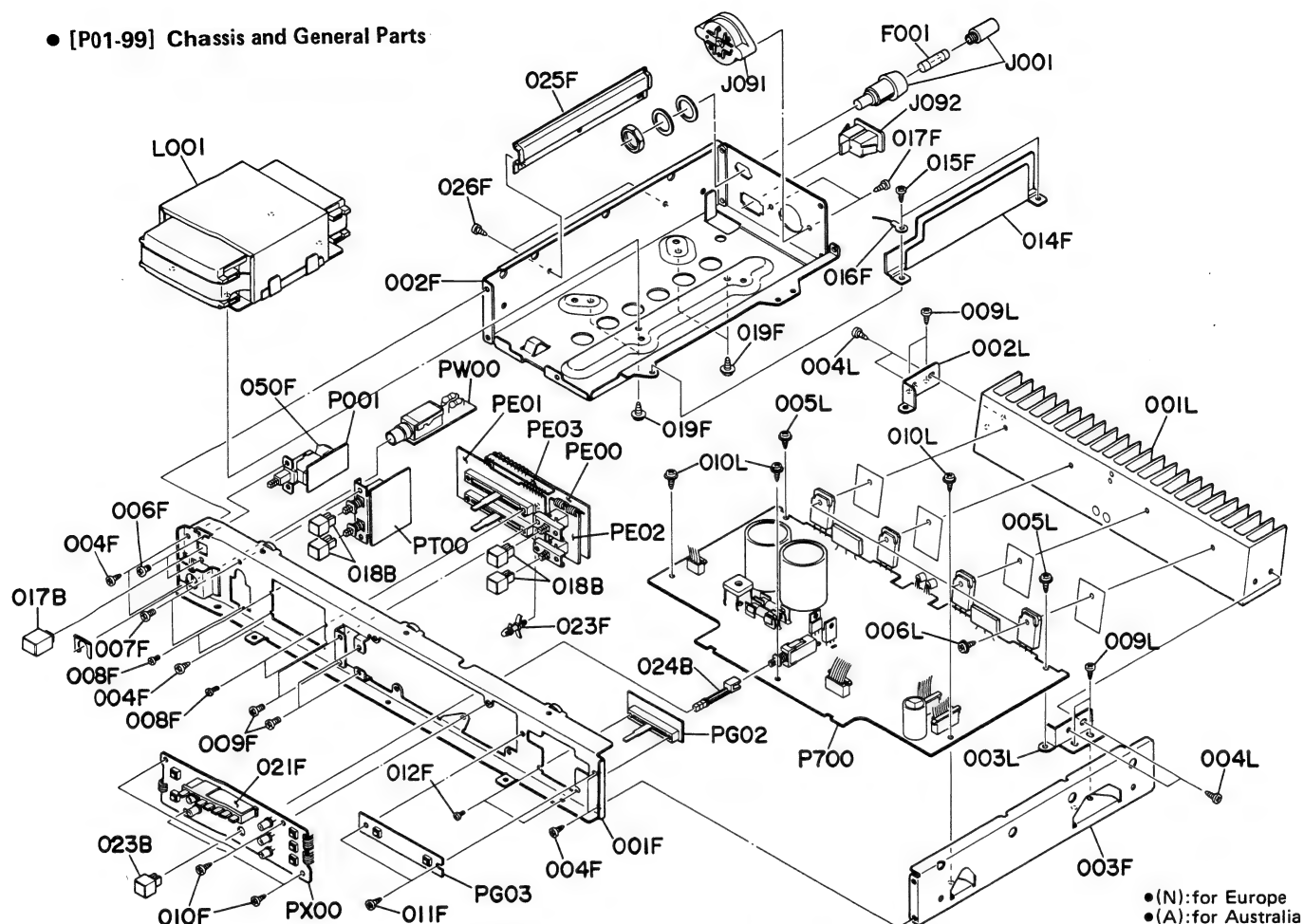


●(N):for Europe
●(A):for Australia

| REF. DESIG. | Q'TY | | PART NO. | DESCRIPTION |
|----------------|------|---|------------|--------------------------|
| | N | A | | |
| 001D | 1 | 1 | 241H257010 | Lid, Top Cover |
| 002D | 4 | 4 | 51260408U0 | B.T. Screw B4 x 8 |
| 004D | 1 | 1 | 241H257020 | Lid, Bottom Cover |
| 005D | 9 | 9 | 51280308B0 | B.H. Tapped Screw B3 x 8 |
| 006D | 4 | 4 | 416H057010 | Leg |
| 007D | 4 | 4 | 51280406U0 | B.H. Tapped Screw B4 x 6 |

| REF. DESIG. | Q'TY | | PART NO. | DESCRIPTION |
|----------------|------|---|------------|-------------|
| | N | A | | |
| 001R | 1 | 1 | 2911861140 | Label |
| 002R | 1 | 1 | 2911861110 | Label |

● [P01-99] Chassis and General Parts

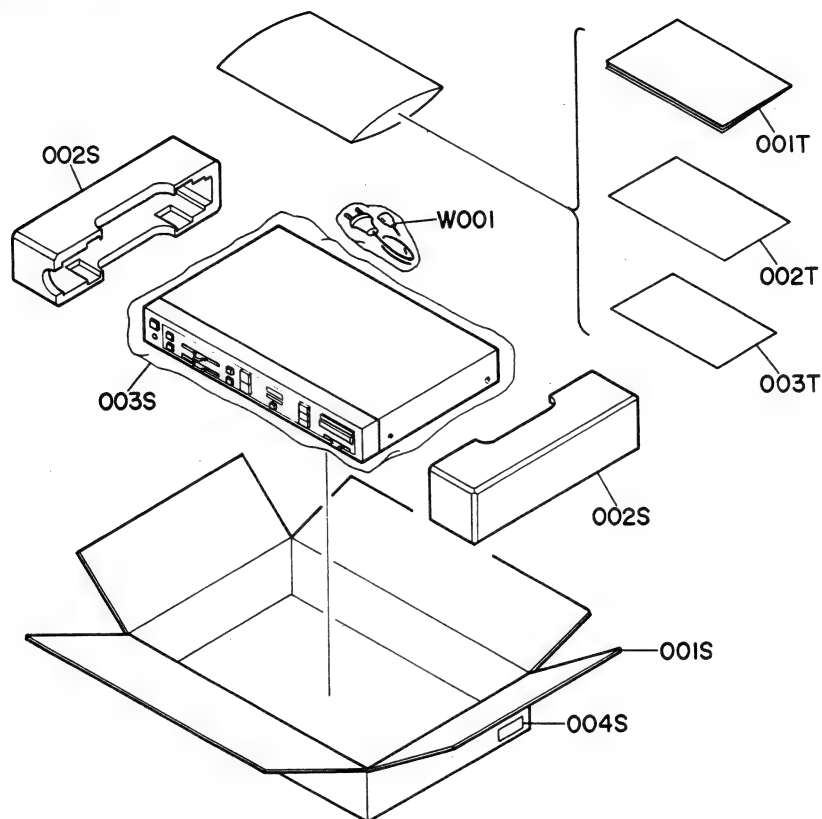


●(N):for Europe
●(A):for Australia

| REF. DESIG. | Q'TY | | PART NO. | DESCRIPTION |
|----------------|------|---|------------|--------------------------|
| | N | A | | |
| 017B | 1 | 1 | 415H154210 | Knob, Power Switch |
| 018B | 4 | 4 | 241H154030 | Knob, Push Switch |
| 023B | 1 | 1 | 241H154040 | Knob, Muting Switch |
| 024B | 1 | 1 | 241H112010 | Shaft |
| 001F | 1 | 1 | 241H160010 | Bracket, Front Chassis |
| 002F | 1 | 1 | 241H160020 | Bracket, Transformer |
| 003F | 1 | 1 | 241H160030 | Bracket, Stay; (R) |
| 004F | 5 | 5 | 51280308B0 | B.H. Tapped Screw B3 x 8 |
| 006F | 2 | 2 | 51100306A9 | B.H.M. Screw B3 x 6 |
| 007F | 2 | 2 | 51100306A9 | B.H.M. Screw B3 x 6 |
| 008F | 4 | 4 | 51100203A0 | B.H.M. Screw B2 x 3 |
| 009F | 4 | 4 | 51100306A9 | B.H.M. Screw B3 x 6 |
| 010F | 4 | 4 | 51280308B0 | B.H. Tapped Screw B3 x 8 |
| 011F | 2 | 2 | 51280308B0 | B.H. Tapped Screw B3 x 8 |
| 012F | 2 | 2 | 51100203A0 | B.H.M. Screw B2 x 3 |
| 014F | 1 | 1 | 240H109010 | Shield |
| 015F | 2 | 2 | 51280308B0 | B.H. Tapped Screw B3 x 8 |
| 016F | 1 | 1 | 62030049W0 | Lug |
| 017F | 2 | 2 | 51280308B0 | B.H. Tapped Screw B3 x 8 |

| REF. DESIG. | Q'TY | | PART NO. | DESCRIPTION |
|----------------|------|---|------------|--------------------------|
| | N | A | | |
| 019F | 4 | 4 | 51260408B0 | B.T. Screw B4 x 8 |
| 021F | 1 | 1 | 241H051010 | Guide, LED Spacer |
| 023F | 1 | 1 | 240H101010 | Support |
| 025F | 1 | 1 | 241H053010 | Cover |
| 026F | 2 | 2 | 51280308B0 | B.H. Tapped Screw B3 x 8 |
| 050F | 1 | 1 | 139T120200 | Insulator |
| 001L | 1 | 1 | 241H267010 | Heatsink |
| 002L | 1 | 1 | 241H160060 | Bracket, (L) |
| 003L | 1 | 1 | 241H160070 | Bracket, (R) |
| 004L | 4 | 4 | 51280308B0 | B.H. Tapped Screw B3 x 8 |
| 005L | 2 | 2 | 51260308B0 | B.H. Screw B3 x 8 |
| 006L | 4 | 4 | 51260310B0 | B.H. Screw B3 x 10 |
| 009L | 4 | 4 | 51280308B0 | B.H. Tapped Screw B3 x 8 |
| 010L | 3 | 3 | 51260308B0 | B.T. Screw B3 x 8 |
| △ F001 | 1 | 1 | FS10080800 | Fuse, 800mA T 250V |
| J001 | 1 | 1 | YJ08000290 | Jack, Fuse Holder |
| △ J091 | 1 | 1 | BY05080050 | Voltage Selector |
| △ J092 | 1 | 1 | YP04000580 | Plug, AC Inlet |
| △ L001 | 1 | 1 | TS17802010 | Power Transformer |

● [H01-99] Packing Materials



●(N):for Europe
●(A):for Australia

| REF. DESIG. | Q'TY | | PART NO. | DESCRIPTION |
|----------------|------|---|------------|--------------------------------|
| | N | A | | |
| 001S | 1 | 1 | 241H801010 | PACKING Packing Case |
| 002S | 2 | 2 | 241H809010 | Cushion |
| 003S | 1 | 1 | 9090808030 | Polyethylene Sheet |
| 004S | 4 | | 9526019060 | Serial No. Card |
| 004S | | 4 | 9526019030 | Serial No. Card |
| 001T | 1 | 1 | 241H851310 | Instructions |
| 002T | 1 | 1 | 241H851320 | Instructions, Spec |
| 003T | 1 | | 241H856010 | Circuit Diagram |
| 003T | | 1 | 9631000090 | Guarantee Card |

| REF. DESIG. | Q'TY | | PART NO. | DESCRIPTION |
|----------------|------|---|------------|-----------------|
| | N | A | | |
| △ W001 | 1 | | ZC01805010 | A.C. Power Cord |
| △ W001 | | 1 | ZC02006020 | A.C. Power Cord |

15. ELECTRICAL PARTS LIST

•(N):for Europe
•(A):for Australia

| REF. DESIG. | QTY | | PART NO. | DESCRIPTION |
|--|-----|---|------------|--|
| | N | A | | |
| P400 | 1 | 1 | YK241H10B0 | P400-PHONO INPUT CIRCUIT BOARD |
| | 1 | 1 | ZZ241H80B0 | P.W. Board, Phono Input P.W. Board Assembly |
| P400-CAPACITORS | | | | |
| CV01 | 1 | 1 | EJ33502510 | Elect 3.3μF 25V |
| CV02 | 1 | 1 | EJ33502510 | Elect 3.3μF 25V |
| CV03 | 1 | 1 | EJ33502510 | Elect 3.3μF 25V |
| CV04 | 1 | 1 | EJ33502510 | Elect 3.3μF 25V |
| CV05 | 1 | 1 | EJ33502510 | Elect 3.3μF 25V |
| CV06 | 1 | 1 | EJ33502510 | Elect 3.3μF 25V |
| CV07 | 1 | 1 | EJ33502510 | Elect 3.3μF 25V |
| CV08 | 1 | 1 | EJ33502510 | Elect 3.3μF 25V |
| C401 | 1 | 1 | EJ33502510 | Elect 3.3μF 25V |
| C402 | 1 | 1 | EJ33502510 | Elect 3.3μF 25V |
| C403 | 1 | 1 | DF15332310 | Film 3300pF ±5% |
| C404 | 1 | 1 | DF15332310 | Film 3300pF ±5% |
| C405 | 1 | 1 | DF15123310 | Film 0.012μF ±5% |
| C406 | 1 | 1 | DF15123310 | Film 0.012μF ±5% |
| C409 | 1 | 1 | EJ33502510 | Elect 3.3μF 25V |
| C410 | 1 | 1 | EJ33502510 | Elect 3.3μF 25V |
| C411 | 1 | 1 | EJ10700610 | Elect 100μF 6.3V |
| C412 | 1 | 1 | EJ10700610 | Elect 100μF 6.3V |
| C413 | 1 | 1 | EJ47601610 | Elect 47μF 16V |
| C414 | 1 | 1 | EJ47601610 | Elect 47μF 16V |
| C415 | 1 | 1 | DD15101370 | Ceramic 100pF ±5% |
| C416 | 1 | 1 | DD15101370 | Ceramic 100pF ±5% |
| C417 | 1 | 1 | DD15821370 | Ceramic 820pF ±5% |
| C418 | 1 | 1 | DD15821370 | Ceramic 820pF ±5% |
| P400-RESISTORS (All Resistors are ±5% and ¼W) | | | | |
| RV01 | 1 | 1 | GD05102140 | 1KΩ |
| RV02 | 1 | 1 | GD05102140 | 1KΩ |
| RV03 | 1 | 1 | GD05105140 | 1MΩ |
| RV04 | 1 | 1 | GD05105140 | 1MΩ |
| RV05 | 1 | 1 | GD05102140 | 1KΩ |
| RV06 | 1 | 1 | GD05102140 | 1KΩ |
| RV07 | 1 | 1 | GD05105140 | 1MΩ |
| RV08 | 1 | 1 | GD05105140 | 1MΩ |
| RV09 | 1 | 1 | GD05102140 | 1KΩ |
| RV10 | 1 | 1 | GD05102140 | 1KΩ |
| RV11 | 1 | 1 | GD05105140 | 1MΩ |
| RV12 | 1 | 1 | GD05105140 | 1MΩ |
| RV13 | 1 | 1 | GD05121140 | 120Ω |
| RV14 | 1 | 1 | GD05121140 | 120Ω |
| RV15 | 1 | 1 | GD05102140 | 1KΩ |
| RV16 | 1 | 1 | GD05102140 | 1KΩ |
| RV17 | 1 | 1 | GD05105140 | 1MΩ |
| RV18 | 1 | 1 | GD05105140 | 1MΩ |
| RV19 | 1 | 1 | GD05221140 | 220Ω |
| RV20 | 1 | 1 | GD05221140 | 220Ω |
| R401 | 1 | 1 | GD05154140 | 150KΩ |
| R402 | 1 | 1 | GD05154140 | 150KΩ |
| R403 | 1 | 1 | GD05683140 | 68KΩ |
| R404 | 1 | 1 | GD05683140 | 68KΩ |
| R405 | 1 | 1 | GD05222140 | 2.2KΩ |
| R406 | 1 | 1 | GD05222140 | 2.2KΩ |
| R407 | 1 | 1 | GD05223140 | 22KΩ |
| R408 | 1 | 1 | GD05223140 | 22KΩ |
| R409 | 1 | 1 | GD05274140 | 270KΩ |
| R410 | 1 | 1 | GD05274140 | 270KΩ |

| REF. DESIG. | QTY | | PART NO. | DESCRIPTION |
|-------------------------|-----|---|------------|-------------------------------------|
| | N | A | | |
| R411 | 1 | 1 | GD05471140 | 470Ω |
| R412 | 1 | 1 | GD05471140 | 470Ω |
| R413 | 1 | 1 | GD05103140 | 10KΩ |
| R414 | 1 | 1 | GD05103140 | 10KΩ |
| R435 | 1 | 1 | GG05101140 | 100Ω |
| R436 | 1 | 1 | GG05101140 | 100Ω |
| Q401 | 1 | 1 | HC10008090 | P400-SEMICONDUCTOR IC NJM4558D-D |
| P400-MISCELLANEOUS | | | | |
| JV01 | 1 | 1 | YT02020330 | Terminal, (2P) RCA Jack |
| JV02 | 1 | 1 | YT02060200 | Terminal, (6P) RCA Jack |
| JV03 | 1 | 1 | YT02060200 | Terminal, (6P) RCA Jack |
| W401 | 1 | 1 | YU03340260 | Jumper Lead, (3P) |
| W402 | 1 | 1 | YU02260260 | Jumper Lead, (2P) |
| W403 | 1 | 1 | YU02280260 | Jumper Lead, (2P) |
| W404 | 5 | 5 | YU03340260 | Jumper Lead, (3P) |
| W408 | 1 | 1 | YU03340260 | Jumper Lead, (3P) |
| W409 | 1 | 1 | YU03340260 | Jumper Lead, (3P) |
| P700-MAIN CIRCUIT BOARD | | | | |
| P700 | 1 | 1 | YK241H10A0 | P.W. Board, Main |
| | 1 | 1 | ZZ241H80A0 | P.W. Board Assembly |
| P700-CAPACITORS | | | | |
| CE01 | 1 | 1 | EA33505030 | Elect 3.3μF 50V |
| CE02 | 1 | 1 | EA33505030 | Elect 3.3μF 50V |
| CG04 | 1 | 1 | EA47601030 | Elect 47μF 10V |
| CG05 | 1 | 1 | EA47601030 | Elect 47μF 10V |
| CG07 | 1 | 1 | EA22505030 | Elect 2.2μF 50V |
| CG08 | 1 | 1 | EA22505030 | Elect 2.2μF 50V |
| CG09 | 1 | 1 | EA22505030 | Elect 2.2μF 50V |
| CG10 | 1 | 1 | EA22505030 | Elect 2.2μF 50V |
| CG11 | 1 | 1 | EA22505030 | Elect 2.2μF 50V |
| CG12 | 1 | 1 | EA22505030 | Elect 2.2μF 50V |
| CG13 | 1 | 1 | EA47601630 | Elect 47μF 16V |
| CG14 | 1 | 1 | EA47601630 | Elect 47μF 16V |
| CG15 | 1 | 1 | EA22505030 | Elect 2.2μF 50V |
| CG16 | 1 | 1 | EA22505030 | Elect 2.2μF 50V |
| CG17 | 1 | 1 | EA10505030 | Elect 1μF 50V |
| CK01 | 1 | 1 | EA10505030 | Elect 1μF 50V |
| CK02 | 1 | 1 | EA10705030 | Elect 100μF 50V |
| CK03 | 1 | 1 | EA33700630 | Elect 330μF 6.3V |
| CK04 | 1 | 1 | EA33505030 | Elect 3.3μF 50V |
| CK05 | 1 | 1 | EA33505030 | Elect 3.3μF 50V |
| CS01 | 1 | 1 | DK17103300 | Ceramic 0.01μF ±20% |
| CS02 | 1 | 1 | EA22801630 | Elect 2200μF 16V |
| CS03 | 1 | 1 | EA47405030 | Elect 0.47μF 50V |
| CX01 | 1 | 1 | EA33505030 | Elect 3.3μF 50V |
| CX02 | 1 | 1 | EA33505030 | Elect 3.3μF 50V |
| C701 | 1 | 1 | DK16101300 | Ceramic 100pF ±10% |
| C702 | 1 | 1 | DK16101300 | Ceramic 100pF ±10% |
| C703 | 1 | 1 | EA33505030 | Elect 3.3μF 50V |
| C704 | 1 | 1 | EA33505030 | Elect 3.3μF 50V |
| C705 | 1 | 1 | EA10701030 | Elect 100μF 10V |
| C706 | 1 | 1 | EA10701030 | Elect 100μF 10V |
| C707 | 1 | 1 | DD15471370 | Ceramic 470pF ±5% |
| C708 | 1 | 1 | DD15471370 | Ceramic 470pF ±5% |
| C709 | 1 | 1 | EA47605030 | Elect 47μF 50V |
| C710 | 1 | 1 | EA47605030 | Elect 47μF 50V |

●(N):for Europe
●(A):for Australia

| REF. DESIG. | Q'TY N A | PART NO. | DESCRIPTION |
|---|-------------|------------|--------------------|
| C711 | 1 1 | EA47505030 | Elect 4.7μF 50V |
| C712 | 1 1 | EA47505030 | Elect 4.7μF 50V |
| C713 | 1 1 | DD11070300 | Ceramic 7pF ±0.5pF |
| C714 | 1 1 | DD11070300 | Ceramic 7pF ±0.5pF |
| C715 | 1 1 | DK16151550 | Ceramic 150pF ±10% |
| C716 | 1 1 | DK16151550 | Ceramic 150pF ±10% |
| C717 | 1 1 | DK16151550 | Ceramic 150pF ±10% |
| C718 | 1 1 | DK16151550 | Ceramic 150pF ±10% |
| C719 | 1 1 | DF15333550 | Film 0.033μF ±5% |
| C720 | 1 1 | DF15333550 | Film 0.033μF ±5% |
| Δ C801 | 1 1 | DK18103510 | Ceramic 0.01μF |
| Δ C803 | 1 1 | EB68804570 | Elect 6800μF 45V |
| Δ C804 | 1 1 | EB68804570 | Elect 6800μF 45V |
| C807 | 1 1 | EA10601630 | Elect 10μF 16V |
| C808 | 1 1 | EA10601630 | Elect 10μF 16V |
| C809 | 1 1 | EA10701630 | Elect 100μF 16V |
| C810 | 1 1 | EA10701630 | Elect 100μF 16V |
| P700-RESISTORS (All Resistors are ±5% and ¼W) | | | |
| RG03 | 1 1 | GD05563140 | 56KΩ |
| RG04 | 1 1 | GD05272140 | 2.7KΩ |
| RG05 | 1 1 | GG05102140 | 1KΩ |
| RG06 | 1 1 | GG05102140 | 1KΩ |
| RG07 | 1 1 | GD05153140 | 15KΩ |
| RG08 | 1 1 | GD05153140 | 15KΩ |
| RG09 | 1 1 | GD05473140 | 47KΩ |
| RG10 | 1 1 | GD05473140 | 47KΩ |
| RG11 | 1 1 | GD05154140 | 150KΩ |
| RG12 | 1 1 | GD05154140 | 150KΩ |
| RG13 | 1 1 | GG05100140 | 10Ω |
| RG14 | 1 1 | GG05100140 | 10Ω |
| RG18 | 1 1 | GD05224140 | 220KΩ |
| RG19 | 1 1 | GD05472140 | 4.7KΩ |
| RG20 | 1 1 | GD05472140 | 4.7KΩ |
| RG21 | 1 1 | GD05472140 | 4.7KΩ |
| RG22 | 1 1 | GD05472140 | 4.7KΩ |
| RG23 | 1 1 | GD05472140 | 4.7KΩ |
| RG24 | 1 1 | RA03020800 | 3KΩ(B), Trimming |
| RK01 | 1 1 | GD05154140 | 150KΩ |
| RK02 | 1 1 | GD05224140 | 220KΩ |
| RK03 | 1 1 | GD05394140 | 390KΩ |
| RK04 | 1 1 | GD05333140 | 33KΩ |
| RK05 | 1 1 | GD05222140 | 2.2KΩ |
| RK06 | 1 1 | GD05222140 | 2.2KΩ |
| RK07 | 1 1 | GD05221140 | 220Ω |
| RK08 | 1 1 | GD05221140 | 220Ω |
| RK09 | 1 1 | GG05100140 | 10Ω |
| RK11 | 1 1 | GD05392140 | 3.9KΩ |
| RS01 | 1 1 | GD05104140 | 100KΩ |
| RS02 | 1 1 | GD05224140 | 220KΩ |
| RS04 | 1 1 | GD05103140 | 10KΩ |
| RX01 | 1 1 | GD05334140 | 330KΩ |
| RX02 | 1 1 | GD05274140 | 270KΩ |
| RX03 | 1 1 | GD05472140 | 4.7KΩ |
| RX05 | 1 1 | RA01030800 | 10KΩ(B), Trimming |

| REF. DESIG. | Q'TY N A | PART NO. | DESCRIPTION |
|----------------------------|-------------|------------|----------------------|
| R701 | 1 1 | GD05221140 | 220Ω |
| R702 | 1 1 | GD05221140 | 220Ω |
| R703 | 1 1 | GD05393140 | 39KΩ |
| R704 | 1 1 | GD05393140 | 39KΩ |
| R705 | 1 1 | GD05182140 | 1.8KΩ |
| R706 | 1 1 | GD05182140 | 1.8KΩ |
| R707 | 1 1 | GD05471140 | 470Ω |
| R708 | 1 1 | GD05471140 | 470Ω |
| R709 | 1 1 | GD05472140 | 4.7KΩ |
| R710 | 1 1 | GD05472140 | 4.7KΩ |
| R711 | 1 1 | GD05393140 | 39KΩ |
| R712 | 1 1 | GD05393140 | 39KΩ |
| R715 | 1 1 | NF02101140 | 100Ω |
| R716 | 1 1 | NF02101140 | 100Ω |
| R717 | 1 1 | GD05152140 | 1.5KΩ |
| R718 | 1 1 | GD05152140 | 1.5KΩ |
| R719 | 1 1 | GD05222140 | 2.2KΩ |
| R720 | 1 1 | GD05222140 | 2.2KΩ |
| R723 | 1 1 | GG05100140 | 10Ω |
| R724 | 1 1 | GG05100140 | 10Ω |
| R725 | 1 1 | GG05100140 | 10Ω |
| R726 | 1 1 | GG05100140 | 10Ω |
| R727 | 1 1 | GG05221120 | 220Ω ¼W |
| R728 | 1 1 | GG05221120 | 220Ω ¼W |
| R729 | 1 1 | RA02020800 | 2KΩ(B), Trimming |
| R730 | 1 1 | RA02020800 | 2KΩ(B), Trimming |
| R731 | 1 1 | GG05221120 | 220Ω ¼W |
| R732 | 1 1 | GG05221120 | 220Ω ¼W |
| R733 | 1 1 | GA05150020 | 15Ω 2W |
| R734 | 1 1 | GA05150020 | 15Ω 2W |
| R735 | 1 1 | BW10000030 | 0.27Ω x 2 5W, Compo. |
| R736 | 1 1 | BW10000030 | 0.27Ω x 2 5W, Compo. |
| Δ R801 | 1 1 | RF05121070 | 120Ω 7W, Fusible |
| Δ R802 | 1 1 | RF05121120 | 120Ω ¼W, Fusible |
| R803 | 1 1 | GD05222140 | 2.2KΩ |
| R804 | 1 1 | GD05222140 | 2.2KΩ |
| P700-SEMICONDUCTORS | | | |
| DG01 | 1 1 | HD20001000 | Diode 1S1555 |
| DG02 | 1 1 | HD20001000 | Diode 1S1555 |
| DG03 | 1 1 | HD20001000 | Diode 1S1555 |
| DG06 | 1 1 | HD30023010 | Zener HZ6C1L |
| DG07 | 1 1 | HD30023010 | Zener HZ6C1L |
| DK05 | 1 1 | HD30023090 | Zener WZ071 |
| Δ DK06 | 1 1 | HD20015030 | Diode DS135D |
| Δ DK07 | 1 1 | HD20015030 | Diode DS135D |
| DK08 | 1 1 | HD30023010 | Zener HZ6C1L |
| DK09 | 1 1 | HD20001000 | Diode 1S1555 |
| DK10 | 1 1 | HD20001000 | Diode 1S1555 |
| DS04 | 1 1 | HD20001000 | Diode 1S1555 |
| Δ D801 | 1 1 | HD20008290 | Diode S4VB20 |
| D804 | 1 1 | HD30009010 | Zener HZ12A2L |
| D805 | 1 1 | HD30009010 | Zener HZ12A2L |
| D806 | 1 1 | HD20002210 | Diode 1S2472 |
| D807 | 1 1 | HD20002210 | Diode 1S2472 |
| QG01 | 1 1 | HC10008370 | IC TL489C |
| QG02 | 1 1 | HC10085050 | IC TC9153P |
| QG03 | 1 1 | HC10008090 | IC NJM4558DD |

●(N):for Europe
●(A):for Australia

| REF. DESIG. | QTY | | PART NO. | DESCRIPTION |
|---------------------------|-----|---|------------|------------------------------|
| | N | A | | |
| QK01 | 1 | 1 | HT111752B0 | Transistor 2SA1175(JF or HF) |
| QK02 | 1 | 1 | HT327852B0 | Transistor 2SC2785(JF or HF) |
| QK03 | 1 | 1 | HT413022B0 | Transistor 2SD1302(S or T) |
| QK04 | 1 | 1 | HT413022B0 | Transistor 2SD1302(S or T) |
| QS01 | 1 | 1 | HC10110030 | IC LC7815H |
| QS02 | 1 | 1 | HC406603C0 | IC LC4066B-H |
| QS03 | 1 | 1 | HC406603C0 | IC LC4066B-H |
| Q701 | 1 | 1 | HT309452B0 | Transistor 2SC945(P or Q) |
| Q702 | 1 | 1 | HT309452B0 | Transistor 2SC945(P or Q) |
| Q703 | 1 | 1 | HT206472F0 | Transistor 2SB647(C or D) |
| Q704 | 1 | 1 | HT206472F0 | Transistor 2SB647(C or D) |
| Q705 | 1 | 1 | HT406672F0 | Transistor 2SD667(C or D) |
| Q706 | 1 | 1 | HT406672F0 | Transistor 2SD667(C or D) |
| △Q707 | 1 | 1 | HT111032B0 | Transistor 2SA1103(O or Y) |
| △Q708 | 1 | 1 | HT111032B0 | Transistor 2SA1103(O or Y) |
| △Q709 | 1 | 1 | HT325782B0 | Transistor 2SC2578(O or Y) |
| △Q710 | 1 | 1 | HT325782B0 | Transistor 2SC2578(O or Y) |
| Q711 | 1 | 1 | HC10111030 | IC STK3042A |
| △Q802 | 1 | 1 | HT412652A0 | Transistor 2SD1265(O or P) |
| △Q803 | 1 | 1 | HT205072P0 | Transistor 2SB507(D or E) |
| P700-MISCELLANEOUS | | | | |
| △F801 | 1 | 1 | FS10400800 | Fuse 4.0AT 250V |
| △F802 | 1 | 1 | FS10400800 | Fuse 4.0AT 250V |
| JG05 | 1 | 1 | YJ06002450 | Jack, (6P) |
| JS01 | 1 | 1 | YJ06002450 | Jack, (6P) |
| JS02 | 1 | 1 | YJ06002390 | Jack, (5P) |
| JS03 | 1 | 1 | YJ06002440 | Jack, (4P) |
| JS04 | 1 | 1 | YJ06002440 | Jack, (4P) |
| JX01 | 1 | 1 | YJ06002430 | Jack, (3P) |
| J801 | 1 | 1 | YJ08000270 | Jack, Fuse Clip |
| J802 | 1 | 1 | YJ08000270 | Jack, Fuse Clip |
| J803 | 1 | 1 | YJ08000270 | Jack, Fuse Clip |
| J804 | 1 | 1 | YJ08000270 | Jack, Fuse Clip |
| L701 | 1 | 1 | LL23905120 | Coil |
| L702 | 1 | 1 | LL23905120 | Coil |
| SK01 | 1 | 1 | SP02011030 | Push Switch, Muting |
| WG01 | 1 | 1 | YB00300720 | Connective Cord, (3P) |
| WG02 | 1 | 1 | YU06140260 | Jumper Lead, (6P) |
| WG03 | 1 | 1 | YU03100260 | Jumper Lead, (3P) |
| WS03 | 1 | 1 | YU03160260 | Jumper Lead, (3P) |
| WS04 | 1 | 1 | YU06120260 | Jumper Lead, (6P) |
| WS05 | 1 | 1 | YU05120260 | Jumper Lead, (5P) |

| REF. DESIG. | QTY | | PART NO. | DESCRIPTION |
|---|-----|---|------------|--|
| | N | A | | |
| PE00 | 1 | 1 | YK241H10H0 | PE00-TONE AMP CIRCUIT BOARD P.W. Board, Tone Amp |
| | 1 | 1 | ZZ241H80H0 | P.W. Board Assembly |
| PE00-CAPACITORS | | | | |
| CE03 | 1 | 1 | EA10701030 | Elect 100μF 10V |
| CE04 | 1 | 1 | EA10701030 | Elect 100μF 10V |
| CE05 | 1 | 1 | DF15224350 | Film 0.22μF ±5% |
| CE06 | 1 | 1 | DF15224350 | Film 0.22μF ±5% |
| CE07 | 1 | 1 | DK16331300 | Ceramic 330pF ±10% |
| CE08 | 1 | 1 | DK16331300 | Ceramic 330pF ±10% |
| CE09 | 1 | 1 | EA33505030 | Elect 3.3μF 50V |
| CE10 | 1 | 1 | EA33505030 | Elect 3.3μF 50V |
| CE11 | 1 | 1 | DD15560370 | Ceramic 56pF ±5% |
| CE12 | 1 | 1 | DD15560370 | Ceramic 56pF ±5% |
| CE13 | 1 | 1 | DK18103310 | Ceramic 0.01μF |
| CE14 | 1 | 1 | DK18103310 | Ceramic 0.01μF |
| PE00-RESISTORS (All Resistors are ±5% and ¼W) | | | | |
| RE01 | 1 | 1 | GD05683140 | 68KΩ |
| RE02 | 1 | 1 | GD05683140 | 68KΩ |
| RE03 | 1 | 1 | GD05471140 | 470Ω |
| RE04 | 1 | 1 | GD05471140 | 470Ω |
| RE05 | 1 | 1 | GD05822140 | 8.2KΩ |
| RE06 | 1 | 1 | GD05822140 | 8.2KΩ |
| RE07 | 1 | 1 | GD05392140 | 3.9KΩ |
| RE08 | 1 | 1 | GD05392140 | 3.9KΩ |
| RE09 | 1 | 1 | GD05470140 | 47Ω |
| RE10 | 1 | 1 | GD05470140 | 47Ω |
| PE00-SEMICONDUCTORS | | | | |
| QE01 | 1 | 1 | HC10021090 | IC NJM4560D-D |
| QE02 | 1 | 1 | HC10003090 | IC NJM4558D |
| PE00-MISCELLANEOUS | | | | |
| WE01 | 1 | 1 | YU04060260 | Jumper Lead, (4P) |
| WE02 | 1 | 1 | YU04060260 | Jumper Lead, (4P) |
| WE03 | 1 | 1 | YU04060260 | Jumper Lead, (4P) |
| WE04 | 1 | 1 | YU03060260 | Jumper Lead, (3P) |
| PE01-TONE VOLUME CIRCUIT BOARD | | | | |
| PE01 | 1 | 1 | YK241H10G0 | P.W. Board, Tone Volume |
| | 1 | 1 | ZZ241H80G0 | P.W. Board Assembly |
| PE01-CAPACITORS | | | | |
| CE17 | 1 | 1 | DK16101300 | Ceramic 100pF ±10% |
| CE18 | 1 | 1 | DK16101300 | Ceramic 100pF ±10% |
| CE19 | 1 | 1 | DF15102300 | Film 1000pF ±5% |
| CE20 | 1 | 1 | DF15102300 | Film 1000pF ±5% |
| CE21 | 1 | 1 | DF16183300 | Film 0.018μF ±10% |
| CE22 | 1 | 1 | DF16183300 | Film 0.018μF ±10% |
| CE23 | 1 | 1 | DF16183300 | Film 0.018μF ±10% |
| CE24 | 1 | 1 | DF16183300 | Film 0.018μF ±10% |

•(N):for Europe
•(A):for Australia

| REF. DESIG. | QTY | | PART NO. | DESCRIPTION |
|----------------|-----|---|------------|--|
| | N | A | | |
| | | | | PE01-RESISTORS (All Resistors are $\pm 5\%$ and $\frac{1}{4}W$) |
| RE13 | 1 | 1 | GD05682140 | 6.8K Ω |
| RE14 | 1 | 1 | GD05682140 | 6.8K Ω |
| RE15 | 1 | 1 | GD05682140 | 6.8K Ω |
| RE16 | 1 | 1 | GD05682140 | 6.8K Ω |
| RE17 | 1 | 1 | GD05273140 | 27K Ω |
| RE18 | 1 | 1 | GD05273140 | 27K Ω |
| RE19 | 1 | 1 | GD05103140 | 10K Ω |
| RE20 | 1 | 1 | GD05103140 | 10K Ω |
| RE21 | 1 | 1 | GD05273140 | 27K Ω |
| RE22 | 1 | 1 | GD05273140 | 27K Ω |
| RE23 | 1 | 1 | RS01040230 | 100K Ω (B) x 2, Variable |
| RE24 | 1 | 1 | RS01040230 | 100K Ω (B) x 2, Variable |
| | | | | PE02-LOW FILTER/LOUDNESS CIRCUIT BOARD |
| PE02 | 1 | 1 | YK241H10J0 | P.W. Board, Low Filter Loudness |
| | 1 | 1 | ZZ241H80J0 | P.W. Board Assembly |
| CE15 | 1 | 1 | DF15823350 | Film Cap. 0.082 μ F $\pm 5\%$ |
| CE16 | 1 | 1 | DF15823350 | Film Cap. 0.082 μ F $\pm 5\%$ |
| SE01 | 1 | 1 | SP02011020 | Push Switch, Loudness |
| SE02 | 1 | 1 | SP02011020 | Push Switch, Low Filter |
| | | | | PE03-CONNECT CIRCUIT BOARD |
| PE03 | 1 | 1 | YK241H10I0 | P.W. Board, Connect |
| | | | | PG02-BALANCE VOLUME CIRCUIT BOARD |
| PG02 | 1 | 1 | YK241H10D0 | P.W. Board, Balance Volume |
| | 1 | 1 | ZZ241H80D0 | P.W. Board Assembly |
| RG25 | 1 | 1 | RX02040040 | Variable Resistor 200K Ω (W) |
| | | | | PG03-ELECT VOLUME SWITCH CIRCUIT BOARD |
| PG03 | 1 | 1 | YK241H10C0 | P.W. Board, Elect Volume Switch |
| | 1 | 1 | ZZ241H80C0 | P.W. Board Assembly |
| SG01 | 1 | 1 | SP01010570 | Push Switch, Down |
| SG02 | 1 | 1 | SP01010570 | Push Switch, Up |
| | | | | PT00-SPEAKER SWITCH CIRCUIT BOARD |
| PT00 | 1 | 1 | YK241H10L0 | P.W. Board, Speaker Switch |
| | 1 | 1 | ZZ241H80L0 | P.W. Board Assembly |
| ST01 | 1 | 1 | SP02020690 | Push Switch, Speaker |
| WT01 | 1 | 1 | YU03060260 | Jumper Lead, (3P) |
| WT02 | 1 | 1 | YU02280240 | Jumper Lead, (2P) |
| WT03 | 1 | 1 | YU02280240 | Jumper Lead, (2P) |
| WT04 | 1 | 1 | YU03160240 | Jumper Lead, (3P) |

| REF. DESIG. | QTY | | PART NO. | DESCRIPTION |
|----------------|-----|---|------------|--|
| | N | A | | |
| | | | | PV00-SPEAKER TERMINAL CIRCUIT BOARD |
| PV00 | 1 | 1 | YK241H10N0 | P.W. Board, Speaker Terminal |
| | 1 | 1 | ZZ241H80N0 | P.W. Board Assembly |
| J011 | 1 | 1 | YT03080020 | Terminal, Speaker |
| WV01 | 1 | 1 | YU02260240 | Jumper Lead, (2P) |
| | | | | PW01-PHONE JACK CIRCUIT BOARD |
| PW00 | 1 | 1 | YK241H10M0 | P.W. Board, Phone Jack |
| | 1 | 1 | ZZ241H80M0 | P.W. Board Assembly |
| RW01 | 1 | 1 | GA05331010 | Resistor 330 Ω $\pm 5\%$ 1W |
| RW02 | 1 | 1 | GA05331010 | Resistor 330 Ω $\pm 5\%$ 1W |
| JW01 | 1 | 1 | YJ01001790 | Jack, Headphone |
| | | | | PX00-FUNCTION POWER DISPLAY CIRCUIT BOARD |
| PX00 | 1 | 1 | YK241H1610 | P.W. Board, Function Power Display |
| | 1 | 1 | ZZ241H8610 | P.W. Board Assembly |
| | | | | PX00-CAPACITORS |
| CX03 | 1 | 1 | EA22601630 | Elect 22 μ F 16V |
| CX04 | 1 | 1 | EA47505030 | Elect 4.7 μ F 50V |
| | | | | PX00-RESISTORS (All Resistors are $\pm 5\%$ and $\frac{1}{4}W$) |
| RX06 | 1 | 1 | GD05274140 | 270K Ω |
| RX07 | 1 | 1 | GD05103140 | 10K Ω |
| RX08 | 1 | 1 | GD05683140 | 68K Ω |
| RX09 | 1 | 1 | GD05103140 | 10K Ω |
| RX10 | 1 | 1 | GD05122140 | 1.2K Ω |
| RY01 | 1 | 1 | GD05182140 | 1.8K Ω |
| RY02 | 1 | 1 | GD05561140 | 560 Ω |
| RY03 | 1 | 1 | GD05104140 | 100K Ω |
| RY04 | 1 | 1 | GD05561140 | 560 Ω |
| RY05 | 1 | 1 | GD05182140 | 1.8K Ω |
| RY06 | 1 | 1 | GD05561140 | 560 Ω |
| RY07 | 1 | 1 | GD05561140 | 560 Ω |

•(N):for Europe
•(A):for Australia

| REF. DESIG. | QTY | | PART NO. | DESCRIPTION | |
|----------------|-----|---|------------|--|----------|
| | N | A | | | |
| | | | | PX00-SEMICONDUCTORS | |
| DX02 ? | 6 | 6 | HI10008320 | L.E.D. | GL9PR2 |
| DX07 | 1 | 1 | HI10017080 | L.E.D. | SEL1413E |
| DY01 | 1 | 1 | HI10017080 | L.E.D. | SEL1413E |
| DY02 | 1 | 1 | HI10017080 | L.E.D. | SEL1413E |
| DY03 | 1 | 1 | HI10017080 | L.E.D. | SEL1413E |
| DY04 | 1 | 1 | HI10011080 | L.E.D. | SEL1213C |
| DY05 | 1 | 1 | HI10011080 | L.E.D. | SEL1213C |
| QX01 | 1 | 1 | HC10051020 | IC | AN6886 |
| | | | | PX00-SWITCHES | |
| SY01 | 1 | 1 | SP01010570 | Push Switch, Tuner | |
| SY03 | 1 | 1 | SP01010570 | Push Switch, Phono | |
| SY03 | 1 | 1 | SP01010570 | Push Switch, CD/AUX | |
| SY04 | 1 | 1 | SP01010570 | Push Switch, Video | |
| SY05 | 1 | 1 | SP01010570 | Push Switch, Tape 1 | |
| | | | | PX00-MISCELLANEOUS | |
| WX01 | 1 | 1 | YU03200260 | Jumper Lead, (3P) | |
| | | | | PY00-ELECT VOLUME LED CIRCUIT BOARD | |
| PY00 | 1 | 1 | YK241H10F0 | P.W. Board, Elect Volume LED | |
| | 1 | 1 | ZZ241H80F0 | P.W. Board Assembly | |
| DG05 | 1 | 1 | HI10804050 | L.E.D. | TLR205-5 |

| REF. DESIG. | QTY | | PART NO. | DESCRIPTION | |
|----------------|-----|---|------------|--|--|
| | N | A | | | |
| | | | | P001-POWER SWITCH CIRCUIT BOARD | |
| P001 | 1 | 1 | YK241H10K0 | P.W. Board, Power Switch | |
| | 1 | 1 | ZZ241H80K0 | P.W. Board Assembly | |
| △G001 | 1 | 1 | DK18103840 | Ceramic Cap. 0.01μF | |
| △S001 | 1 | 1 | SP01010560 | Push Switch, Power | |

| | |
|----------|---------------------|
| (W01-99) | Assembly and Wiring |
| (T01-99) | Adjustment |
| (X01-00) | Correction |

NOTE ON SAFETY:

Symbol △ Fire or electrical shock hazard. Only original parts should be used to replace any part marked with symbol △. Any other component substitution (other than original type), may increase risk of fire or electrical shock hazard.

16. TECHNICAL SPECIFICATIONS

AUDIO SECTION

POWER OUTPUT PER CHANNEL

| | |
|---|-------|
| DIN 4 OHMS 1 kHz | 49W |
| RMS 4 OHMS 1 kHz | 49W |
| DIN 8 OHMS 1 kHz | 38W |
| RMS 8 OHMS 1 kHz | 37W |
| TOTAL HARMONIC DISTORTION AT RMS 8 OHMS | 0.05% |
| I.M. DISTORTION | 0.05% |
| DAMPING FACTOR 8 OHMS (1 kHz) | 60 |

MM CARTRIDGE INPUT

| | |
|--|----------|
| Frequency Response (RIAA) 20 Hz ~ 20 kHz | ±0.5 dB |
| Signal-to-Noise Ratio | 80 dB |
| Input Impedance | 47k ohms |
| Input Capacitance | 270 pF |
| Input Sensitivity | 2.5 mV |
| Equivalent Input Noise | 1.0 µV |

AUX. INPUT

| | |
|--------------------------|----------------|
| Input Impedance | 30 k ohms |
| Input Sensitivity | 150 mV |
| Frequency Response ±2 dB | 10 Hz ~ 40 kHz |
| Signal-to-Noise Ratio | 92 dB |

OUTPUT VOLTAGE

| | |
|----------|--------|
| Tape Out | 460 mV |
|----------|--------|

OUTPUT IMPEDANCE

| | |
|----------|----------|
| Tape Out | 290 ohms |
|----------|----------|

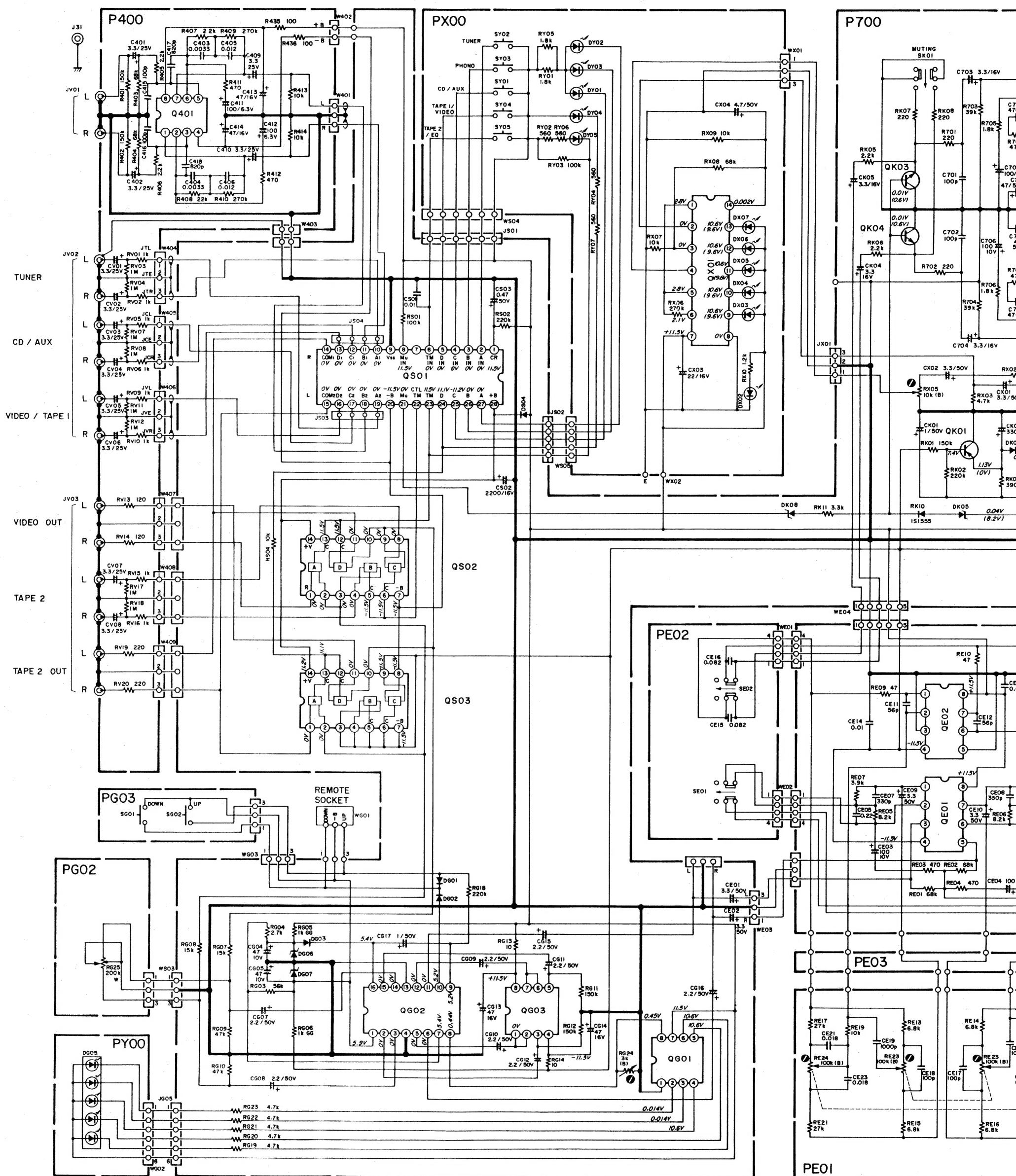
GENERAL

| | |
|---|-------------------------------|
| Power Requirement | 110/120/220/240V AC, 50/60 Hz |
| Power Consumption at Rated Output, both Channels Driven | 150 W |
| Dimensions | |
| Panel Width | 416 mm |
| Panel Height | 55 mm |
| Depth | 260 mm |
| Weight | |
| Unit Alone | 5.1 kg |



Specifications and appearance are subject to change for modification without notice.

MEMORANDUM

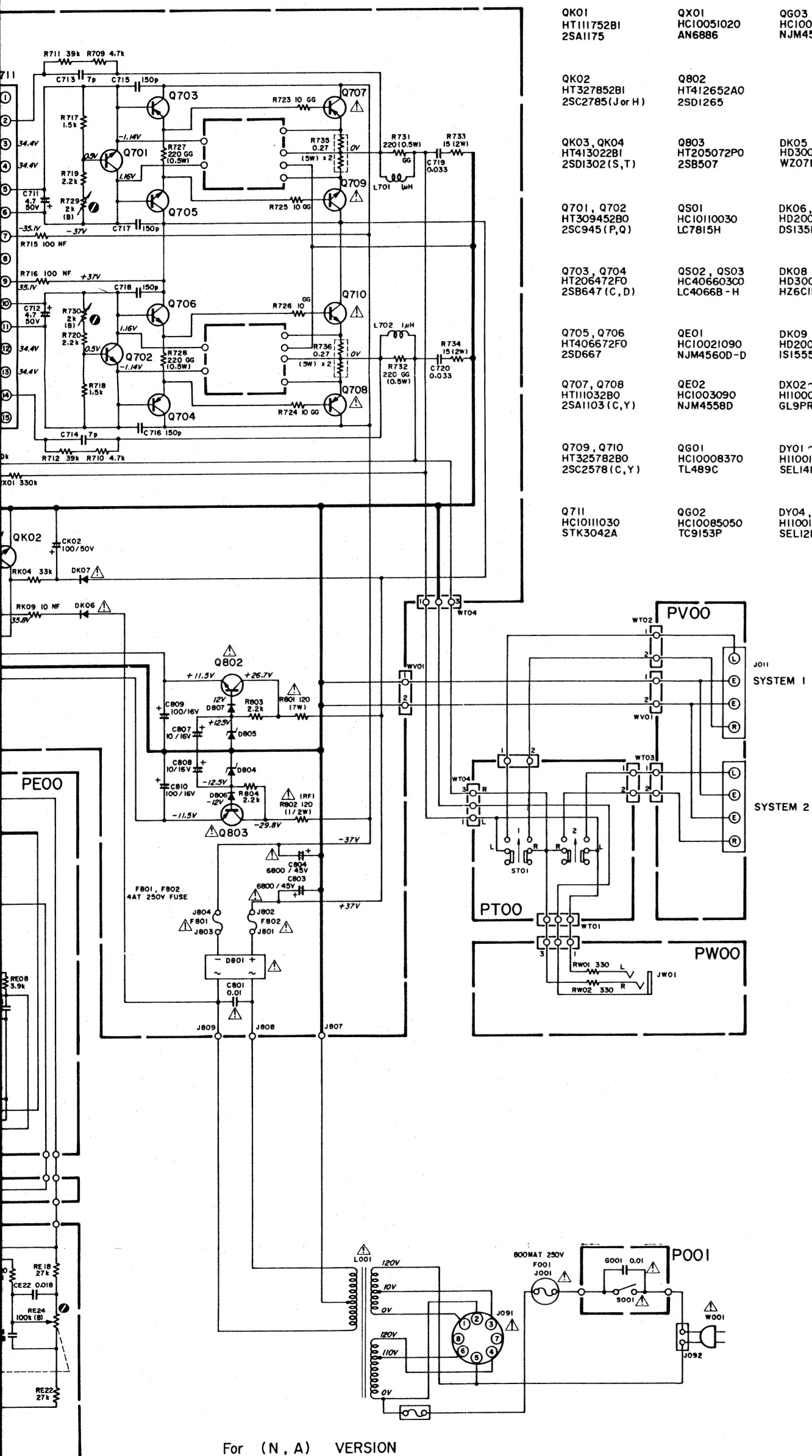
17. SCHEMATIC DIAGRAM



NOTE ON SAFETY :

Symbol  Fire or electrical shock hazard. Only original parts should be used to replace any part marked with symbol . Any other component substitution (other than original type), may increase risk of fire or electrical shock hazard.

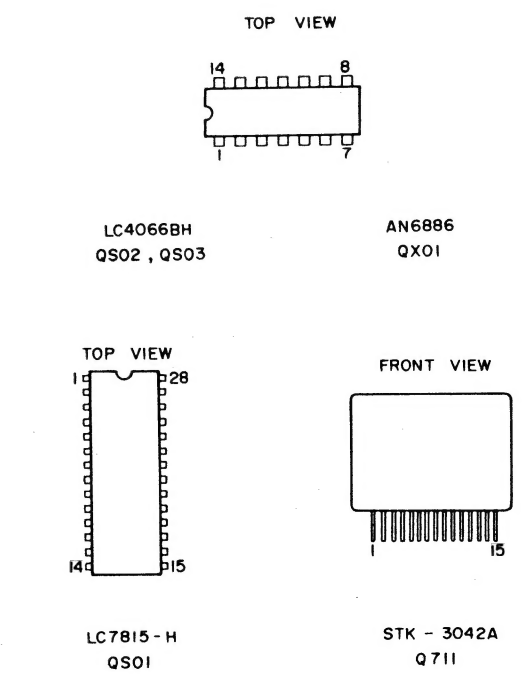
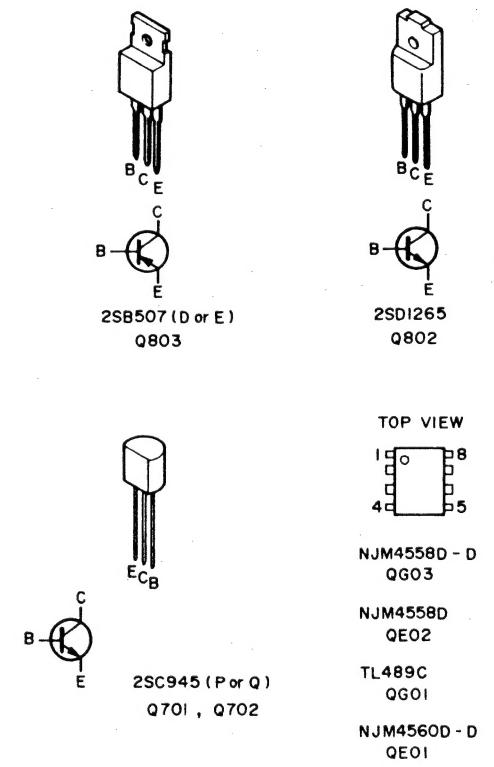
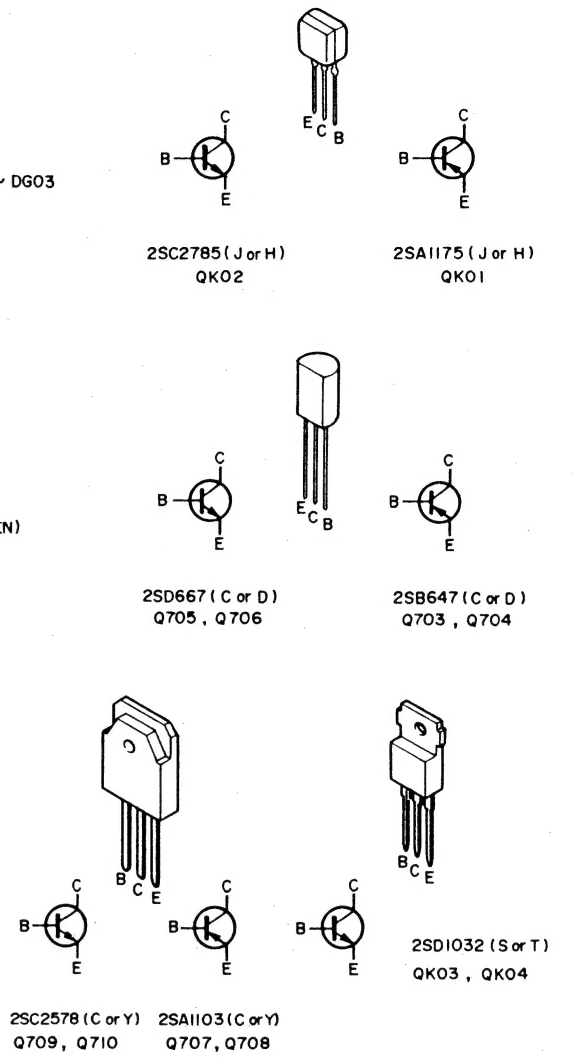
Model PM330



For (N, A) VERSION

Components and wiring are subject to change for modification without notice.

| | | | |
|---|---|--------------------------------------|--|
| QK01 HT111752B1 2SA1175 | QX01 HC10051020 AN6886 | QG03 HC10008090 NJM4558 DD | D801 HD20008290 S4VB20 |
| QK02 HT327852B1 2SC2785(J or H) | Q802 HT412652A0 2SD1265 | | D804, D805 HD30009011 HZ12A2L |
| QK03, QK04 HT413022B1 2SD1302(S, T) | Q803 HT205072P0 2SB507 | DK05 HD30023090 WZ07I | DS04, DG01 ~ DG03 HD20001001 IS1555 |
| Q701, Q702 HT309452B0 2SC945(P, Q) | QS01 HC10110030 LC7815H | DK06, DK07 HD20015030 DS135D | DG05 H110804050 TLR 205 - 5 |
| Q703, Q704 HT206472F0 2SB647(C, D) | QS02, QS03 HC406603C0 LC4066B - H | DK08 HD30023011 HZ6CIL | DG06, DG07 HD30023011 HZ6CIL |
| Q705, Q706 HT406672F0 2SD667 | QE01 HC10021090 NJM4560D - D | DK09 HD20001001 IS1555 | D806, D807 HD20002210 IS2472 (GREEN) |
| Q707, Q708 HT111032B0 2SA1103(C, Y) | QE02 HC1003090 NJM4558D | DX02 ~ DX07 H110008320 GL9PR2 | |
| Q709, Q710 HT325782B0 2SC2578(C, Y) | QG01 HC10008370 TL489C | DY01 ~ DY03 H11001080 SEL1413E | |
| Q711 HC10111030 STK3042A | QG02 HC10085050 TC9153P | DY04, DY05 H11001080 SEL1213C | |



TC9153P
QG02

LC7815 - H
QS01

STK - 3042A
0711